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The Shield Archaic

J. V. Wright

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J. V. Wright

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Biographical Note

J. V. Wright obtained his academic training from McMaster University, the University of Toronto and the University of Wisconsin. He received his Ph.D. in anthropology in 1964. His primary archaeological interest is in the Iroquoian and Algonkian cultures of central Canada. His fieldwork has ranged from the Arctic to New York state and from Quebec to Alberta. He is currently Head of the Research Section, Archaeological Survey of Canada, National Museum of Man, Ottawa.

Résumé*

Il se fait depuis peu des recherches archéologiques dans le Bouclier canadien. Il s'agit d'expéditions sporadiques auxquelles participent un nombre relativement restreint de personnes. Région de broussailles, de marais, de lacs et de rivières, couvrant près du tiers du territoire canadien, le Bouclier présente pour le chercheur d'énormes difficultés d'ordre pratique. Elles supplantent presque la préoccupation fondamentale qui est de découvrir des vestiges préhistoriques. Chaque année, la route permet de pénétrer plus profondément dans le territoire. Toutefois, pendant de nombreuses années encore, le canot et les avions nolisés seront les seuls moyens pratiques de réunir les renseignements nécessaires à la reconstitution archéologique de ce territoire. Les voyages en canot exigent l'accomplissement d'une foule de tâches qui n'ont rien à voir avec les fouilles. De plus, ils limitent celles-ci à cause du nombre restreint de personnes qui peuvent les entreprendre et de la courte saison où ils sont possibles. Enfin, la location d'avions est extrêmement coûteuse. Tous ces facteurs réduisent sensiblement l'étendue des recherches archéologiques dans cette région. Il y a, en outre, les problèmes chroniques issus des vestiges superficiels, des hautes eaux, des sols acides et de la densité de la végétation. On comprend donc que chaque découverte coûte aux chercheurs tellement de temps et d'efforts.

Toutefois, comme dans la plupart des situations, il y a des compensations. L'homogénéité dans l'espace et la continuité dans le temps caractérisent les ensembles archéologiques de cette région. Les spécialistes peuvent en tirer des extrapolations qui sont impossibles dans les territoires situés plus au sud, où l'évolution culturelle a été beaucoup plus complexe. Les quelques vestiges archéologiques que l'on découvre ici sont souvent concentrés dans certains secteurs. Il n'est pas rare, par exemple, de trouver des dépôts stratifiés ou superposés représentant une assez longue période. Comme on s'y attend, les sites les plus riches du nord sont relativement pauvres par rapport à ceux du sud. Et, comme c'est souvent le cas dans d'autres régions, plus on remonte dans le temps, plus les vestiges se font rares. En conséquence, les artefacts sont non seulement peu nombreux, mais souvent équivoques. La plupart du temps, les pièces sont récoltées à la surface du sol. L'archéologue qui travaille dans le Bouclier doit donc se contenter d'échantillons de petite taille, qui sont souvent détachés de leur contexte originel. Il doit pourtant les considérer valables jusqu'à preuve du contraire s'il veut reconstituer l'histoire culturelle de la région.

Les vestiges isolés sont rares. Toutefois, dans les études comparatives, on traite chaque site isolément et on le rattache à une période définie. En pratique, on présume une certaine continuité temporelle. Cependant, la portion représentative des échantillons se situe dans une période assez courte. Il est donc permis de considérer le site comme partie d'un tout si on lui attribue une valeur relative. Les problèmes que posent les échantillons de petite taille et l'incertitude quant au niveau temporel du site peuvent être très embarrassants. On n'a qu'à les relier à l'optique de l'étude, qui veut englober les tendances dans le temps et l'espace d'un

*En guise de résumé, les éditeurs reproduisent ici une traduction de l'introduction de l'ouvrage. Les lecteurs de langue anglaise sont priés de se référer à cette partie du texte pour recueillir les renseignements essentiels.

système qui s'étend du Keewatin à l'extrémité est du Cap-Breton. Cependant, la méthode semble satisfaisante. Dans un certain nombre de cas, les récoltes superficielles géographiquement rapprochées présentent des différences marquées. On ne saurait les expliquer qu'en fonction de variations temporelles.

L'étude établit l'existence et la nature d'une tradition de l'Archaïque du Bouclier. Celle-ci s'est répandue sur le tiers du Canada pendant la plus grande partie de sa préhistoire et a suscité l'évolution non archaïque ultérieure. Par tradition, il faut entendre une continuité dans le temps et dans l'espace, qui fait que les plus grandes variations à l'intérieur d'une même culture évoquent néanmoins des techniques communes ayant une même origine et contrastant avec celles des populations voisines et contemporaines qui ne participent pas à cette tradition. L'état de nos connaissances indique dans les grandes lignes l'évolution culturelle de l'Archaïque du Bouclier. Pourtant, le présent mémoire n'est qu'une esquisse très sommaire. Étant donné l'étendue géographique et chronologique de la tradition, les quelques renseignements que nous possédons ne nous permettent pas de traiter le sujet en profondeur. On doit considérer les schémas et les hypothèses proposés comme un cadre de travail que l'on pourra vérifier, modifier, élaborer ou même rejeter à la suite de recherches plus poussées. Si l'on parvient à cerner de plus près la thèse d'une tradition archaïque du Bouclier, alors la présente étude aura atteint son but.

Cette thèse elle-même a pris corps lentement et par étapes. Le premier contact de l'auteur avec ce qui devait devenir un chaînon de la tradition archaïque s'est produit en 1954. Cette année-là, Frank Ridley permit à Jim Wright de le seconder dans les fouilles du site Narrows, au lac Abitibi. Un peu après 1960, ce dernier adopta l'expression *Archaïque du Bouclier* pour grouper tous les vestiges de l'époque précéramique du nord de l'Ontario et du Québec. Il en est arrivé à cette désignation après avoir considéré que W. A. Ritchie et Douglas Byers avaient respectivement appliqué les termes à peu près équivalents de *Laurentien* et de *Boréal* à une manifestation archaïque tout à fait différente. À mesure que ses recherches et ses fouilles progressaient dans la forêt boréale et le Bouclier canadien, et qu'il perfectionnait sa connaissance et son évaluation des travaux de ses prédécesseurs, il en est venu à élaborer sa thèse. Cela n'aurait pas été possible sans les recherches antérieures de Frank Ridley dans le nord de l'Ontario (Ridley 1954, 1956, 1957, 1958, 1962 et 1966) et d'Edward S. Rogers dans le centre du Québec (Rogers et Rogers 1948, 1950; Rogers et Bradley 1953). Les recherches auxquelles Elmer Harp s'est livré dans le Keewatin central (Harp 1959*a*, 1959*b*, 1961 et 1962) ont aussi joué un rôle essentiel. Bien sûr, beaucoup d'autres ont participé à la formulation définitive de la thèse de l'Archaïque et leurs contributions sont analysées dans le chapitre trois. Cependant, il faut reconnaître que celles de Ridley et Harp, en particulier, et celle de Rogers, à un degré moindre, ont été les plus déterminantes, sans qu'ils le sachent d'ailleurs. Sans leurs travaux, la thèse de Wright n'aurait pas la même envergure.

Comme on l'a vu plus haut, les vestiges sont toujours rares dans la forêt boréale. Par exemple, dans les onze sites de l'Archaïque du Bouclier décrits en détail, on n'a recueilli que 778 pièces. Il existe

aussi une masse importante de données supplémentaires que nous n'avons pas jugé bon d'exposer ici, puisqu'elles ne peuvent guère servir à établir des types d'artefacts. De toute façon, l'auteur préfère employer d'autres méthodes d'analyse (Wright 1969). En général il sépare d'abord chacune des collections en genres d'artefacts: pointes de trait, grattoirs, etc., puis subdivise ceux-ci en catégories plus particularisées. Par exemple, il classe les pointes de trait en différents genres selon la configuration: lancéolées, à encoches latérales, etc. Il fait ensuite des observations pertinentes sur la forme et les dimensions des objets groupés dans une même catégorie. Ce système détermine plusieurs niveaux de spécificité dans les comparaisons. Par exemple, les tableaux distributifs d'artefacts, en plus de révéler l'outillage de base de l'Archaïque du Bouclier et les grandes lignes de son évolution, permettent une comparaison simple, souvent très révélatrice, avec les complexes voisins et contemporains appartenant à d'autres traditions. De façon analogue, les variantes parmi les pointes de trait offrent une base de comparaison plus large que les types qu'ils représentent. Finalement, les données relatives aux caractères spécifiques révèlent les tendances les plus étendues comme les plus régionales. Elles contribuent en même temps à la masse de données pouvant servir à de futurs travaux comparatifs.

Malheureusement, l'analyse des caractères ne s'est pas faite de façon tout à fait cohérente. Quelques observations effectuées il y a plusieurs années se fondent sur des collections qui ont été retournées à leurs propriétaires par la suite. Cependant, il faut dire que les incohérences ont une portée relativement faible. La méthode de spécification de Charles A. Martijn (Martijn et Rogers 1969) se révèle de beaucoup la plus efficace. L'auteur ne l'a pas connue assez tôt pour s'en servir dans la présente étude. La méthode veut qu'on décrive chaque objet de façon détaillée et conséquente et qu'on ordonne les données ainsi recueillies. D'autres chercheurs peuvent les y retrouver et les interpréter, si besoin est, selon de nouveaux critères. Lorsqu'on travaille avec de petits échantillons provenant de plusieurs régions, cette méthode est aussi pratique qu'efficace.

Le chapitre qui traite des comparaisons met en relief les niveaux d'analyse les plus généraux et ne s'attache que très peu aux caractères spécifiques. Cela reflète simplement l'orientation de l'étude et la nature des données. Il s'agissait de faire ressortir les caractéristiques générales de la tradition archaïque du Bouclier. L'auteur a donc insisté davantage sur l'ensemble que sur les détails. En même temps, il s'est efforcé de relier les différents niveaux d'interprétation. Il semble ne pas y avoir de méthode parfaite d'analyse. Selon le but et la portée de telle ou telle étude, on peut avoir recours à une seule méthode ou bien à plusieurs. Les aspects généraux sont nettement mis en évidence ici pour en arriver à une interprétation assez large. Toutefois l'auteur a le souci de nuancer les données générales en y ajoutant des renseignements précis, de façon à ne pas sacrifier la continuité des événements pour les accommoder avec la spéculation. L'avenir révélera le succès obtenu. À ce stade, la comparaison des niveaux soit généraux, soit spécifiques, montre que la tradition archaïque du Bouclier est très continue.

Le mémoire compare à cette tradition trois systèmes voisins et contemporains. Il s'agit de l'Archaïque Laurentien au sud-est, de

l'Archaïque des Plaines au sud-ouest et du Prédorset au nord. Les données qu'on possède sur ceux-ci sont plus ou moins abondantes ou précises. À l'occasion, il a fallu adapter les données publiées par d'autres afin de les rendre comparables. La plupart du temps, ce sont les termes qu'on a modifiés; par exemple, les garnitures terminales du Prédorset deviennent des pointes de trait ou bien on regroupe divers artefacts dans une même catégorie. Ces modifications s'imposaient absolument pour situer la comparaison quant à la nature des pièces et à leur niveau de ressemblance. L'auteur a eu soin d'établir la justesse des modifications jugées nécessaires, et d'expliquer chacune en détail à l'endroit approprié. Les collections se rapportant aux sites du Keewatin et à la plupart de ceux du Prédorset sont réunies à la Division d'archéologie du Musée national de l'Homme, et on a réinterprété ces collections dans les cas où cela a paru nécessaire. Étant donné le niveau de comparaison très général, le risque d'erreur est très minime. Les auteurs des articles qui ont inspiré la présente démarche comprendront sûrement les raisons qui nécessitaient une adaptation de leurs données.

Certains travaux qui allaient manifestement dans le même sens n'ont pas servi aux comparaisons parce que les données qu'ils contiennent, tant qualitatives que quantitatives, paraissaient incomplètes. Enfin, certains sites intéressants, tels ceux de Tadoussac et de Sheguiandah, sont exclus parce qu'il s'agit essentiellement d'ateliers. On s'est limité à l'étude des sites d'habitations, même si, dans la pratique, on ne peut faire totalement abstraction des ateliers. Cette façon de procéder visait à assurer la continuité dans les comparaisons; elle ne dénote pas un manque d'intérêt pour les carrières. Le rôle spécialisé de celles-ci nous empêche en effet de les comparer de façon valable avec les sites d'habitations dans une étude qui cherche à établir des tendances spatiales et temporelles très générales. En fait, la technique de la taille éclatée de la pierre, propre à l'Archaïque du Bouclier, est une étude en elle-même, que le présent mémoire effleure à peine.

Dans le dernier chapitre, l'auteur formule cinq hypothèses. Étant donné qu'elles découlent des données étudiées dans les chapitres deux et trois, il peut être utile de les exposer ici brièvement afin que le lecteur puisse mieux suivre le raisonnement dont s'inspire la majeure partie du mémoire.

Voici donc ces cinq hypothèses:

1. La tradition de l'Archaïque du Bouclier remonte à la période paléo-indienne (culture Plano) et s'est développée dans la partie est des Territoires du Nord-Ouest et probablement dans la partie ouest de la forêt boréale, dans le Bouclier canadien.

En ce qui concerne le district de Keewatin, Elmer Harp a le premier énoncé cette hypothèse dans son étude archéologique de la rivière Thelon inférieure et moyenne:

> Troisième phase: Chasseurs indiens du stade archaïque. Représentée par des vestiges du complexe C. Dérive de la même tradition intérieure fondamentale que la première phase, et est peut-être issue de cette dernière aussi bien que d'autres manifestations culturelles de la même période. *(Traduit de Harp 1961: 63)*

Pour les besoins de notre étude, le complexe C de Harp est assimilé à la tradition archaïque du Bouclier, et sa première phase ou complexe B, à la culture Plano. On retrouve des éléments de continuité tant généraux que spécifiques entre les sites de la tradition Plano, tel celui du lac Grant (inférieur) et ceux de la tradition archaïque du Bouclier, dans le Keewatin (Harp 1959*a*, 1961). Plus à l'ouest, au lac Acasta (Forbis 1961), une datation au radiocarbone fait remonter le site à 5020 ans av. J.-C. ± 360 ans (I-3957) et suggère l'existence de la culture Plano dans les Territoires du Nord-Ouest (Noble 1969).

On ne trouve pas d'indices d'une évolution semblable au sud, dans la forêt, mais, de toute façon, on ne sait que peu de choses sur cette région. La densité de la forêt de même que la localisation le long des grèves des sites les plus anciens, font que les découvertes tiennent surtout à la chance. On trouve dispersés dans la forêt boréale des pointes d'Agate Basin et des formes lancéolées caractéristiques du début de la tradition archaïque du Bouclier, de même que d'autres traits. Cela donne à penser que les événements qui se sont déroulés dans le Keewatin et qui sont bien documentés ont pu aussi se produire plus au sud.

2. La faune et la flore ayant réoccupé les territoires libérés par le retrait des glaces de l'époque Laurentide, les chasseurs de culture Plano de l'Archaïque du Bouclier se sont répandus vers l'est.

Cette hypothèse expliquerait en partie la relative homogénéité de la tradition archaïque du Bouclier à travers toute l'étendue de la forêt boréale du Bouclier canadien. Elle suppose que les sites se font de plus en plus récents à mesure qu'on se dirige vers l'est et, en effet, on trouve des vestiges d'une pénétration et d'une survivance tardives de cette tradition tout à fait à l'est. Il s'avère également que les caractéristiques de la culture Plano décroissent en fréquence à mesure qu'on avance vers l'est. Bien qu'on ne trouve pas d'ossements pour soutenir cette hypothèse, la localisation des sites porte à croire que la migration vers l'est se rattache directement à la poursuite du caribou.

3. Il y a une continuité entre les données culturelles de l'Archaïque du Bouclier et les manifestations postérieures de la forêt boréale du Bouclier canadien. Cela permet de supposer que les peuplades de l'Archaïque du Bouclier parlaient une langue algonquine.

Revenant sur ses opinions (Wright 1967: 128; 1968: 61), l'auteur estime maintenant qu'il y a continuité entre les ensembles lithiques de l'Archaïque du Bouclier et ceux de la tradition Laurel du Manitoba, de l'Ontario et de l'ouest du Québec. Il semble donc que cette tradition manifeste l'évolution subséquente de l'Archaïque du Bouclier, auquel s'ajoutent la céramique et peut-être quelques traits lithiques. À son tour, la tradition Laurel semble avoir donné naissance à certaines manifestations sylvicoles récentes, comme celles de Blackduck et, en partie, celle de Pickering, qui s'est terminée aux temps historiques, chez les populations nordiques de langue algonquine. On suppose que, plus loin vers l'est, l'Archaïque du Bouclier a pris fin à l'époque historique chez les bandes de Cris de l'est (Martijn et Rogers 1969: 348).

4. Les populations de l'Archaïque du Bouclier ont déserté le district de Keewatin vers l'an 1000 av. J.-C.

On a démontré qu'après une occupation à peu près continuelle de l'intérieur du Keewatin, depuis la tradition Plano jusqu'à l'Archaïque du Bouclier récent, les chasseurs de caribou ont quitté la région. L'hypothèse concorde à peu près avec deux autres corps de données. Vers 1500 av. J.-C., des changements de climat ont fait reculer vers le sud la limite de la forêt, sur une distance de près de 200 milles (Bryson, Irving et Larsen 1965; Irving 1968). À peu près à la même époque, commençait à apparaître la culture de l'Arctique des menus Outils venant de la côte. Les vestiges trouvés dateraient de 1500 à 1000 av. J.-C. (Meldgaard, communication personnelle). On peut donc supposer que le climat plus rigoureux qui a fait reculer la forêt a également repoussé vers le sud les peuplades de l'Archaïque du Bouclier occupant le Keewatin, et a permis une pénétration plus profonde des populations de l'Arctique des menus Outils (Prédorset). Cela suppose bien entendu que les chasseurs de l'Archaïque du Bouclier dépendaient de la forêt, et qu'ils exploitaient la toundra selon les saisons. La date de 1075 ans av. J.-C. ± 90 (S-506) attribuée à l'habitation n° 1 du site d'Aberdeen, dans le Keewatin, suggère même que les deux groupes (Archaïque du Bouclier et Prédorset) aient exploité les mêmes secteurs de la toundra centrale, mais à des époques différentes de l'année. Il est même possible que les deux groupes aient concurremment et belliqueusement exploité les troupeaux de caribous de l'intérieur, comme l'ont fait à l'époque historique les Esquimaux et les Chippewas. Les autres occupations de la région semblent s'être produites beaucoup plus tard. Ainsi, peut-on dire que les Esquimaux du caribou y sont venus à l'époque historique, et les rares pointes de flèches à encoches angulaires et latérales qu'on peut attribuer aux Chippewas auraient été fabriquées au début de notre ère.

5. Les relations entre les peuplades archaïques du Bouclier et les populations contemporaines et voisines semblent relativement limitées, et n'avoir entraîné que peu d'innovations culturelles.

On a établi des comparaisons entre l'Archaïque du Bouclier et trois autres groupes: le Prédorset au nord, l'Archaïque Laurentien au sud-est et l'Archaïque des Plaines au sud-ouest. C'est seulement avec le Prédorset qu'on n'a trouvé aucun signe de contact. Le commerce du cuivre natif provenant de la région du lac Supérieur a dû mettre en contact, en particulier, les bandes de l'Archaïque du Bouclier occupant le sud-est du territoire et les peuplades archaïques laurentiennes de la vallée de l'Outaouais. La présence d'artefacts laurentiens caractéristiques dans certains sites de l'Archaïque du Bouclier témoigne directement de ce contact. De même, la présence de calcédoine de la rivière Knife, provenant du Dakota du Nord, donne à penser qu'il y avait un commerce avec les bandes archaïques des plaines. Cependant, les similitudes entre l'outillage de base de l'Archaïque du Bouclier et celui de l'Archaïque des Plaines serait attribuable à une origine commune lointaine (tradition Plano), ou d'un mode de vie analogue, fondé sur la chasse au gros gibier, plutôt qu'à une interaction directe. Les traditions qu'observent les deux groupes dans la fabrication des

pointes de trait paraissent tout à fait indépendantes l'une de l'autre. Les rares signes de contact de l'Archaïque du Bouclier avec l'Archaïque Laurentien au sud-est, ainsi qu'avec l'Archaïque des Plaines à l'ouest, reflètent probablement l'orientation du commerce. On peut difficilement imaginer des influences culturelles unilatérales ou réciproques entre des cultures occupant des milieux aussi différents. Les coutumes funéraires semblent avoir été les traits culturels les plus sensibles aux contacts. En effet, il appert que certains groupes de l'Archaïque du Bouclier ont partagé une tradition funéraire venue d'ailleurs. Mais le manque d'ossements en bon état et de données suffisantes concernant cette tradition nous empêchent d'évaluer son étendue ou sa portée.

Avant d'entrer dans le vif du sujet, considérons brièvement les principales caractéristiques et les tendances de l'Archaïque du Bouclier. Bien que les échantillons provenant des sites ne se prêtent pas à une interprétation bien nette, on peut néanmoins déceler quelques tendances significatives tout au long de la chronologie proposée pour les onze sites décrits dans le chapitre suivant.

Trois classes d'artefacts prédominent dans tous les sites; ce sont dans l'ordre: les grattoirs, les lames bifaces et les pointes de trait. La moyenne des onze sites pour chacune de ces classes s'établit comme suit: grattoirs, 41,6 p. 100; lames bifaces, 25,8 p. 100; pointes de trait, 16,3 p. 100. La fréquence globale, exprimée en pourcentages, s'étend de 57 p. 100 à 94 p. 100, avec une moyenne de 83,8 p. 100. La tendance générale est à l'augmentation de fréquence des pointes de trait et des grattoirs, et à la diminution des lames bifaces.

Parmi les pointes de trait, on note une diminution progressive des pointes lancéolées et une augmentation correspondante des pointes à encoches latérales et peut-être aussi des pointes triangulaires. Par ailleurs, la diminution des pointes doubles est moins importante et moins nette. Il ne semble pas y avoir de tendances notables pour les deux autres formes de pointes, à encoche angulaire et à encoche unique, bien qu'elles semblent caractériser surtout la dernière phase de la tradition.

Les types de grattoirs paraissent plus régionaux que les pointes de trait, mais les éléments locaux n'altèrent en rien les tendances générales. Le nombre des gros grattoirs à bout tranchant, par exemple, augmente et diminue alternativement, ou bien diminue tout simplement. Le nombre des petits grattoirs à bout tranchant augmente généralement à mesure que le temps s'écoule.

On n'a observé aucune tendance particulière au sujet des lames bifaces, si ce n'est la diminution générale de leur fréquence. La répartition et la fréquence des lames unifaces ne manifestent absolument aucune tendance.

La plupart des autres catégories d'artefacts sont si mal représentées qu'on ne peut y déceler aucune tendance. On peut toutefois en déduire certains renseignements spatiaux.

Soulignons que les objets ne sont jamais polis ou ne le sont que très rarement. Des 778 objets en pierre provenant des onze sites fouillés, 16 seulement portent des traces de polissage, soit à peu près deux pour cent de la collection, et encore, une partie de ce pourcentage est relié à l'Archaïque Laurentien.

Preface

The present report has been a number of years in preparation, and has, unfortunately, been subjected to sporadic rather than continuous research. Throughout this period I have received unstinted aid from a large number of people. Indeed, so much assistance of varying degrees has been rendered that I have the uneasy feeling that, because of lapses in memory, important contributions will not be acknowledged. In order to avoid such oversights I will mention the major contributors as they occur in the report.

My sincere appreciation is extended to the following individuals: Mr. W. L. Bancroft and family of Noranda, Quebec, for permission to study the materials from the Beach, Bancroft, and Pinder's Paradise sites; Mr. J. D. Reed of Swastika, Ontario, for permission to study the Drunken Point and Mattagami Post collections; Mr. Elroy Fretz of Shillington, Ontario, and the Timmins–Porcupine Chamber of Commerce for allowing me to examine the Fretz site collection; Dr. W. N. Irving, a former colleague now at the University of Toronto, for permitting me to analyze materials from the Blackfly Cove and Dot Island sites that he collected from southern Keewatin District; Mr. Frank Ridley of Islington, Ontario, for allowing me to re-examine the specimens from the Frank Bay, Abitibi Narrows, and Ghost River sites; Professor K. C. A. Dawson, Lakehead University, Thunder Bay, Ontario, for data on the Boyes site; Dr. David Sanger, Archaeology Division, National Museum of Man, for permission to study the specimens from the Dead Man's Pool site and to use his illustrations; Mr. Brian Preston, Curator of History, Nova Scotia Museum, and Dr. Sanger for bringing to my attention the McEvoy site; Mr. Donald MacLeod, formerly of the Archaeology Division, National Museum of Man, for allowing me to examine his data from the Labrador highlands; Dr. W. A. Kenyon, Royal Ontario Museum, for permission to study pertinent materials from the Rainy River District of northern Ontario; and Dr. W. E. Taylor, Jr., Director, National Museum of Man, for permission to re-examine the specimens from the Buchanan site.

Many valuable discussions were held with Drs. R. J. McGhee, W. N. Irving and David Sanger, and other past and present members of the Archaeology Division, National Museum of Man. Similarly, profitable discussions took place with Dr. W. C. Noble of McMaster University regarding his eastern Mackenzie District data, and with Dr. Jorgen Meldgaard of the National Museum of Denmark regarding Pre-Dorset.

The able field assistance of W. B. Rice, G. F. MacDonald, W. C. Noble, and W. D. Finlayson is gratefully acknowledged. Their abilities represent an incalculable contribution to the present study.

This preface would be sadly incomplete without acknowledgement of the earlier research of Dr. Elmer Harp, Jr., in Keewatin, Labrador, and Quebec. His reports and the material that was available in the Archaeology Division collections constituted a major contribution to the current study. I also wish to extend my gratitude to the support staff of the Archaeology Division, who carried out innumerable tasks in a most competent fashion.

And, as has been said before,

> the writer must offer his apologies and trust to the forbearance of the individuals whose work he has reinterpreted or re-analyzed in an attempt to resolve certain problems encountered in the study. Such adjustments were regarded as necessary in light of the increased body of data and the methods of analysis used and are certainly not intended as criticisms of the earlier workers. *(Wright 1967: v)*

Ottawa
8 September 1970

Figure 1
Location of sites

Chapter I Introduction*

Archaeological research in the Boreal Forest of the Canadian Shield has been a sporadic and recent event involving relatively few individuals. This region of dense bush, swamp, and innumerable lakes and rivers, covering approximately one-third of Canada, presents operational problems almost as substantial as the central problem of acquiring the limited prehistoric remains. Every year more of the area becomes accessible by road, but it will be many years before canoe survey supported by air charter can be replaced as the most effective, indeed only, method of obtaining the necessary data for archaeological reconstructions. A large portion of canoe survey activity is of necessity directed towards non-archaeological matters. Canoe surveys are also limited in terms of both personnel and period of operation. Finally, the required air charter support is a very expensive item. All these practical factors substantially reduce the scope of archaeological operations in the region. Add to these the chronic archaeological problems of veneer sites, high water (natural and man-made), acid soils, and dense forest cover, and it becomes understandable why the ratio of man hours expended for data recovered is so high.

As in most situations, however, there are compensating factors. The broad spatial homogeneity and temporal continuity that characterize the archaeological assemblages permit far more extensive extrapolations than are possible in areas to the south which have more complex regional developments. The sparse archaeological remains of the country tend to concentrate in particularly favoured areas with the result that stratified and/or superpositional deposits, representing a substantial time span, are not uncommon. Unfortunately, but perhaps understandably, even the richest of the northern sites are relatively poverty-stricken when measured by southern standards. And, as is frequently the case in other areas, the further one extends back in time the sparser the evidence becomes.

All these factors coalesce to ensure that archaeological samples are not only limited but quite often equivocal. More often than not most of the artifacts are surface recoveries. Small and all too often disturbed samples are, however, a fact of life in Shield archaeology, and if the culture history of the region is to be reconstructed, such samples must be assumed valid until proved otherwise. Isolated components are rare, yet for comparative purposes sites are generally treated as components with a limited time depth. In reality it is assumed that time depth is present but that the significant proportion of the sample relates to only a limited span, and therefore treatment as a component is valid from a percentages point of view. The problems of small samples and unknown site time-depth are particularly disturbing to a study attempting to demonstrate the temporal and spatial trends within an assemblage ranging from Keewatin District in the Northwest Territories to the eastern tip of Cape Breton in Nova Scotia. For the general purpose of the study, however, the system does appear to work, and in a number of instances surface collections from geographically close sites exhibited marked differences which, in my opinion, can only be interpreted as expressions of temporal variation.

The general purpose of the study is to demonstrate the existence and nature of an Archaic tradition called the Shield Archaic—a tradition that occupied one-third of Canada for most of its prehistory and was directly responsible for later, non-Archaic developments. By tradition I mean continuity in time and space, where the widest variations within the Shield Archaic still echo a common technology with a common ancestry standing in contrast to adjacent and contemporaneous non–Shield Archaic populations. I believe that the available data are sufficient to indicate some of the broader patterns of development in the Shield Archaic. Yet, at the same time, I regard this report as a very preliminary statement. Both the geographic extent and time depth of the Shield Archaic relegate the limited data available to the role of a preliminary outline. The proposed patterns and hypotheses are intended as a loose framework to be tested, rejected, modified, and elaborated by future research. If, however, the general concept of a Shield Archaic tradition is demonstrated, then the major goal of this study will have been achieved.

* Chapter I serves as an expanded summary, as well as an introduction, since it deals with the author's purpose in undertaking this study, the procedure followed, comparisons made, and hypotheses proposed.

The very concept of a Shield Archaic tradition developed in slow stages. My first direct contact with what I would eventually come to regard as a Shield Archaic site was in 1954 when Frank Ridley kindly allowed me to assist him in the excavation of the Narrows site on Lake Abitibi. Sometime after 1960 I coined the term *Shield Archaic* as a catch-all for the pre-ceramic remains of northern Ontario and northern Quebec. The designation was, in part, arrived at as a last option since W. A. Ritchie and Douglas Byers respectively had assigned the equally applicable terms *Laurentian* and *Boreal* to a quite different Archaic manifestation. As my surveys and excavations from 1960 to 1970 in the Boreal Forest–Canadian Shield progressed and my knowledge and appreciation of the northern work of prior researchers increased, the concept of the Shield Archaic expanded. However, this growth would certainly not have been possible without the earlier research of Frank Ridley in northern Ontario (Ridley 1954, 1956, 1957, 1958, 1962, 1966) and Edward S. Rogers in central Quebec (Rogers and Rogers 1948, 1950; Rogers and Bradley 1953). Also vital to the developing concept of a Shield Archaic was the research of Elmer Harp in the central Keewatin District (Harp 1959*a*, 1959*b*, 1961, 1962). Of course there were many others who contributed directly to the eventual formulation of the Shield Archaic, and the contributions of these individuals will be assessed in Chapter III. But Ridley, Harp and Rogers—particularly the first two—were the most substantial, albeit unknowing, contributors to the evolving construct. Without their prior work the current scheme would certainly be substantially reduced in scope.

As mentioned above, small samples are a general archaeological fact in the Boreal Forest. Indeed, from the eleven Shield Archaic sites described in detail, only 778 specimens were obtained. There is also a large body of supplementary data that for various reasons was not or could not be described in detail. In my opinion, these data are not adequate for establishing artifact types; in any event, I favour other techniques of analysis (Wright 1969). The general procedure used was first to segregate a collection into major artifact classes, such as projectile points, scrapers, etc. This was followed by further subdivisions under pertinent artifact classes. For example, projectile points were divided into varieties determined by the basal portion treatment, such as side-notched, lanceolate, and others. Specific form and metrical observations were then made with reference to a particular variety. Such a system allows for several levels of specificity in comparisons. The major artifact class tables, for example, not only revealed the basic tool kit of the Shield Archaic and its trends through time, but also provide a simple and often dramatic comparative unit with adjacent and contemporaneous non–Shield Archaic complexes. Similarily, the simple projectile point varieties provided a broader comparative base than projectile point types per se would have allowed. Finally, the specific attribute data revealed both broad and regional trends and at the same time contributed to the corpus of data for future comparative work. Unfortunately, the attribute analysis is not completely consistent. Some of the analysis was done years ago on collections which were then returned to the original collectors. Such inconsistencies, however, are relatively minor.

By far the most effective specific system that I have seen for dealing with these types of data is that used by Charles A. Martijn (Martijn and Rogers 1969). Indeed, if I had seen this system earlier or had thought of it myself, it would appear in the present study. Martijn's system simply consists of describing each artifact in a very consistent and detailed fashion, and then arranging these data in an appendix where they are available for reinterpretation as required by the differing criteria of future researchers. When dealing with small samples of superficially ubiquitous artifacts Martijn's approach is not only effective but also practical.

It may strike the reader that the grosser levels of analysis have been emphasized in the chapter on comparisons, whereas the specific attribute data have been put to relatively limited use. This impression simply reflects both the facts of the data and the orientation of the study. The major purpose of this study is to outline the general characteristics of the Shield Archaic, and therefore there is an emphasis upon the forest rather than the trees. At the same time an effort has been made to interrelate the various levels of analysis. There are, in my opinion, very few "perfect" systems in analysis; depending upon the scope and purpose of a study, one or many systems may be used. In

this particular study the general has been emphasized over the specific in terms of the broad interpretations. At the same time it is recognized that the general data must be strongly tempered by the specific data in order that the continuity of facts may not be overridden by the convenience of speculation. How successful this operation has been will be tested by time. At this stage, however, a general continuity does appear to exist between the specific and general comparative levels applied to the Shield Archaic.

Three contemporaneous and adjacent assemblages are compared with the Shield Archaic. These are the Laurentian Archaic to the southeast, the Plains Archaic to the southwest, and the Pre-Dorset to the north. The data available for these neighbours of the Shield Archaic are quite variable in terms of both quantity and detail. At times it was necessary to modify the published data in order to arrive at equivalent comparative levels with the Shield Archaic. Most often these changes involved term changes, such as calling the Pre-Dorset "end blades" projectile points, and combining artifact varieties under a single artifact class. The modifications were absolutely necessary to arrive at both equivalent comparative units and corresponding levels of comparison. A concerted effort was made to ensure the accuracy of any necessary modifications, and, indeed, the specific changes are detailed in pertinent portions of the report. All the collections relating to the Keewatin District sites and most of the Pre-Dorset sites were available in the Archaeology Division collections and, where deemed necessary, a re-analysis of these collections was made. As the comparative level applied to the non–Shield Archaic assemblages is quite general, it is felt that the amount of possible error involved in the alterations will be relatively insignificant. I trust to the forbearance and understanding of the authors of the affected reports and hope that they will agree with the reasons for the manipulation of their data. A certain number of obviously pertinent reports could not be used for comparative purposes since the quantitative and/or qualitative data were not sufficiently complete to be incorporated in this study. Finally, a number of other pertinent sites, such as Tadoussac and Sheguiandah, were excluded from the comparisons because of their essentially workshop character. An attempt has been made to use only habitation sites, although it is fully realized that the workshop factor can never be fully excluded. This action was necessary in order to maintain comparative continuity and does not imply a lack of interest in quarry sites. The specialized function of quarry sites, however, does introduce a factor which effectively excludes them from meaningful comparison with habitation sites when broad spatial and temporal trends are being sought. Indeed, the whole matter of the stone-chipping technology of the Shield Archaic is a study in itself, and will be given only cursory treatment in this report.

In the concluding chapter a number of hypotheses will be proposed regarding the Shield Archaic. As these hypotheses stem from the data considered in Chapters II and III, they will be outlined briefly here, in order that the reader may better follow and assess the lines of reasoning applied in the major body of the report.

The five hypotheses are as follows:

Hypothesis 1
The Shield Archaic evolved from a late Palaeo-Indian (Plano tradition) cultural base in the eastern Northwest Territories and probably the western portions of the Boreal Forest–Canadian Shield.

With reference to the Keewatin District of the Northwest Territories this hypothesis was originally proposed by Elmer Harp in his study of the archaeology of the lower and middle Thelon:

> Phase 3: Archaic stage Indian hunters. Represented by Complex C materials. Derived from the same basic interior tradition as Phase 1, and possibly largely evolved from it and other cultural expressions contemporaneous with this phase. *(Harp 1961: 63)*

In this study Harp's Complex C is assigned to the Shield Archaic and his Phase 1 or Complex B is assignable to the Plano tradition. Both general and specific continuities are to be seen between Plano tradition sites such as Grant Lake (lower) and Shield Archaic sites in Keewatin District (Harp 1959*a*, 1961). Further to the west, at the Acasta Lake site (Forbis 1961), a radiocarbon date of 5020 B.C. ±360 (I-3957) provides a temporal placement for a Plano tradition site in the Northwest Territories (Noble 1969).

The evidence for a similar evolution to the south, in the forest, is lacking, but this may well be due to the general paucity of information from the region. Both the dense forest cover and the location of the earlier sites on ancient strand lines probably have combined to make the discovery of pertinent sites a matter of pure chance. However, the scattering of Agate Basin points and lanceolate forms typical of the early Shield Archaic, as well as other traits noted in the western Boreal Forest–Canadian Shield, raises the possibility that events similar to those which took place in the well exposed and documented Keewatin District also occurred to the south.

Hypothesis 2
Plant and animal reoccupation of land freed by the retreating Laurentide ice permitted northwestern Plano–Shield Archaic hunters to expand, particularly in an easterly direction.

This hypothesis would help to explain the relative homogeneity of the Shield Archaic throughout the extensive area of the Boreal Forest–Canadian Shield. Such a hypothesis requires a decreasing temporal gradient as one advances to the east and, indeed, evidence does exist for the late penetration and survival of the Shield Archaic in the extreme east. There is also evidence that traits derived from the Plano tradition present in the Shield Archaic decrease in frequency as one advances eastward. Despite the absence of bone preservation it is inferred, on the basis of site locations, that this eastward spread is directly related to the availability of caribou.

Hypothesis 3
Cultural continuities between the Shield Archaic and subsequent developments in the Boreal Forest–Canadian Shield permit the speculation that the Shield Archaic people probably spoke an Algonkian language.

Contrary to earlier statements (Wright 1967: 128; 1968: 61), it is now proposed that continuity exists between the lithic assemblages of the Shield Archaic and the Laurel tradition of Manitoba, Ontario and western Quebec. It therefore appears that the Laurel tradition represents the continuing development of the Shield Archaic with the addition of ceramics and possibly some lithic traits. Similarly the Laurel tradition appears to have been ancestral to certain Late Woodland developments, such as Blackduck and, in part, Pickering ceramics, which terminated historically in northern Algonkian-speaking populations. Further to the east, it has been proposed that the Shield Archaic terminated historically in eastern bands of the Cree (Martijn and Rogers 1969: 348).

Hypothesis 4
The Shield Archaic populations of the Keewatin District abandoned the area some time about 1000 B.C.

There is evidence that, after a relatively continuous occupation of the interior Keewatin District beginning with the Plano tradition and ending with the late Shield Archaic, the area was abandoned by interior caribou hunters. This hypothesis is in approximate agreement with two other bodies of data. Around 1500 B.C. climatic change resulted in the southward retreat of the tree line up to distances approaching 200 miles (Bryson, Irving, and Larsen 1965; Irving 1968). Roughly correlating with this climatic event is the incipient appearance of Arctic Small Tool people. These remains would date from the period between 1500 and 1000 B.C. (Meldgaard, personal communication). It is suggested that a deterioration of the weather, and with it a retreat of the forest, forced the Shield Archaic occupants of Keewatin farther south and opened the area to deeper penetration by the Arctic Small Tool (Pre-Dorset) peoples. This, of course, assumes that the Shield Archaic hunters were dependent upon the forest and exploited the barrens on a seasonal basis. The date of 1075 B.C. ±90 (S-506) for the late Shield Archaic occupants of House Structure I of the Aberdeen site in Keewatin District even suggests the possibility that the two groups (Shield Archaic and Pre-Dorset) exploited the same areas of the central barrens but perhaps at different times of the year. Or, the mutually nervous synchronic exploitation of the interior caribou resource, as historically existed with the Eskimo and Chipewyan, may have been the case. Later occupations of the region appear to be extremely late. The Caribou Eskimo occupation, for example, is, for all intents and purposes, historic, and the limited number of stemmed and small side-notched projectile points that

could be attributed to the Chipewyan should date some time after the birth of Christ.

Hypothesis 5
The relationship between the Shield Archaic and adjacent contemporaneous populations appears to have been both relatively limited and insignificant in terms of cultural innovation.

Three adjacent and contemporaneous cultural groups were compared with the Shield Archaic: the Pre-Dorset to the north, the Laurentian Archaic to the southeast, and the Plains Archaic to the southwest. Only between the Shield Archaic and the Pre-Dorset was there a complete lack of any evidence of contact. Trade in native copper from the Lake Superior region probably involved contacts between southeastern Shield Archaic bands and the Laurentian Archaic population of the Ottawa Valley in particular. Direct evidence of contact is to be seen in the presence of diagnostic Laurentian artifacts on some Shield Archaic sites. Similarly, the presence of Knife River chalcedony from North Dakota on some Shield Archaic sites suggests contact with the Plains Archaic. The similarities between the basic tool kits of the Shield Archaic and the Plains Archaic may be more a product of a distant, common ancestry (Plano tradition) or a common big-game hunting pattern than of direct interaction. Certainly the projectile point traditions of the two groups appear to be quite independent of one another. These limited evidences of contact between the Shield Archaic and the Laurentian Archaic to the southeast and the Plains Archaic to the southwest probably reflect trading patterns. It is difficult to envisage either reciprocal or unilateral cultural innovations resulting from contacts among cultures that occupied such different environments. Perhaps the most mobile of cultural systems at this level are mortuary practices and, indeed, there is evidence that some Shield Archaic groups shared in a mortuary complex that was introduced into their area. The lack of bone preservation and adequate burial data for the Shield Archaic, however, makes it impossible to assess the extent or impact of such introductions.

Before proceeding to Chapter II it may be of value to outline briefly the major characteristics and trends of the Shield Archaic. Taking into account the very real limitations of some of the site samples, it does appear that a number of significant trends took place within the chronology proposed for the eleven Shield Archaic sites described in the following chapter.

All the sites are dominated by three artifact classes: scrapers, biface blades, and projectile points in that order. The averages for the eleven sites with reference to these artifact classes are as follows: scrapers 41.6 per cent, biface blades 25.8 per cent, and projectile points 16.3 per cent. Indeed, the total percentage frequencies of these three artifact classes for the eleven sites range from 57 per cent to 94 per cent with an average of 83.8 per cent. The general temporal trends are an increase in the projectile point and scraper frequencies and a decrease in biface blade frequencies.

Projectile point trends are represented by a decrease in lanceolate points and a corresponding increase in side-notched points and, possibly, trianguloid points. Of lesser importance and conviction is the decrease in bipointed points. No significant trends are noted for the remaining point forms although corner-notching and single-notching appear to be more characteristic of the late portion of the tradition.

The scraper varieties reflect a more regional character than is the case with the projectile points. This regional character, however, does not completely submerge the broader temporal trends. Large end scrapers, for example, increase and decrease or simply decrease, while small end scrapers generally increase, through time.

No particular trends are noted with regard to the biface blades other than their general frequency decrease through time. Similarly, no particular trends are apparent in the distribution and frequency of the uniface blades.

Most of the remaining artifact classes are so poorly represented that temporal trends are impossible to detect. Certain spatial information, however, is suggested by these data.

An important negative trait is the paucity or absence of purposeful stone grinding to shape artifacts. Of the 778 stone items involved in the analysis of the eleven sites only 16 specimens had been in any fashion shaped by grinding. This represents approximately 2 per cent of the collection, and a portion of this percentage clearly relates to the Laurentian Archaic.

Chapter II Description

Of the eleven sites to be described in this chapter, three are in Quebec, three are in Ontario, two are in Manitoba, and three are located in the Northwest Territories. All the sites in Quebec and two of the sites in Ontario consist of surface collections recovered by local non-professionals who kindly submitted their collections to me for analysis. These four collections were returned to their owners upon completion of the analysis. The remaining Ontario site and the two Manitoba sites were excavated by me during the 1962 and 1967 field seasons. The sites in the Northwest Territories are represented by surface collections made by W. N. Irving (1968) and Elmer Harp (1961) from Keewatin District.

It is fully realized that the major weakness of the following descriptive chapter rests with the fact that eight of the eleven sites consist of surface collections. Both the limited amount of work that has been completed in the region and the paucity of excavatable components, however, force a reliance upon such collections. The dangerous practice of inferring limited time depth for each of the eight surface sites was partially substantiated by comparable excavated data and the general homogeneity of the individual collections. Finally, the assumption that the surface sites are approximate components representing limited segments of time appears to be supported by the comparative results given in Chapter III. Certainly the use of these sites was necessary to demonstrate the existence of an archaeological tradition which occupied the major portion of the Boreal Forest–Canadian Shield area and which is clearly distinguishable from adjacent and contemporaneous complexes. The spatial distribution, inferred time depth, and other factors guarantee the existence of both regional and temporal variations within the Shield Archaic; the definition and demarcation of these variations, however, are basically matters of the future. In the meantime the general construct of a Shield Archaic would appear to be a useful and, indeed, necessary taxonomic device for the comprehension of a substantial portion of Canadian prehistory. Future data will undoubtedly alter the present reconstruction, including errors of interpretation arising from the use of surface collections lacking desirable temporal controls.

Quebec

Specimens from the Beach, Bancroft, and Pinder's Paradise sites were collected by Mrs. J. R. Bancroft and her daughter, Miss J. M. Bancroft, of Noranda, Quebec. Mr. W. L. Bancroft was most helpful in arranging the loan of the collections.

BEACH SITE

The Beach site, 48°17'N and 79°26'W, is located on the north shore of Lac Dasserat to the west of the lake's embouchure into the Kanasuta River, which is in the Hudson Bay drainage via Lake Abitibi. All the artifacts and chipping detritus exhibit extensive abrasion due to water-tumbling, and therefore nothing can be said regarding edge-dulling or use-wear on specimens.

Table 1
Frequency of artifact classes (Beach site)

Class	f	%
Projectile points	31	21.5
Scrapers	63	43.8
Biface blades	40	27.8
Uniface blades	2	1.4
Flake knife	1	0.7
Wedges	4	2.8
Hammerstone	1	0.7
Preforms	2	1.4
Total	144	100.1

Projectile Points

The condition of the 31 specimens is as follows: 17 relatively complete, 8 bases, and 6 tip and blade fragments. The tip and blade fragments are not considered. The remaining 25 specimens are separated into lanceolate, side-notched, trianguloid, and stemmed categories.

Lanceolate (Plate II, figs. 1–5)
Comment: Four specimens are relatively complete and the remaining five specimens are represented by base fragments.
Form attributes: Base configurations are straight (7), concave (1), and convex (1). Cross-sections are elliptical (6), plano-convex (2), and diamond (1).

Metrical attributes:

Attribute	Range	$\bar{x}$
Length	56–86 mm	68.0 mm
Base width	19–31 mm	24.6 mm
Maximum width	19–37 mm	28.2 mm
Thickness	6–13 mm	8.3 mm
Weight	8–31 gm	17.0 gm

Side-notched (Plate II, figs. 6–10)
Comment: Four specimens are complete and the remaining three specimens are represented by base fragments.
Form attributes: A wide range exists in the shape and size of the side-notched points. Base configurations are convex (5) and straight (2). Cross-sections are elliptical (5), plano-convex (1), and diamond (1).
Metrical attributes:

Attribute	Range	$\bar{x}$
Length	26–56 mm	43.5 mm
Base width	16–24 mm	19.3 mm
Notch width	11–20 mm	14.6 mm
Shoulder width	19–26 mm	22.6 mm
Notch height	3–8 mm	5.4 mm
Notch depth	1–5 mm	3.0 mm
Thickness	5–8 mm	6.3 mm
Weight	3–11 gm	7.5 gm

Trianguloid (Plate II, figs. 11–13)
Comment: All five specimens are complete. The trianguloid point variety is always 55 mm or less in length, and the lanceolate variety is always more than 55 mm in length. The reason for this arbitrary separation will be apparent in Chapter III.
Form attributes: Base configurations are all straight, although two are represented by straight fractures that subsequently had thinning flakes removed. Cross-sections are elliptical (3) and plano-convex (2). Blade edges are slightly convex except for one straight-sided specimen. On two specimens the maximum width is slightly above the base. Two specimens possess minimal retouch, one unifacial and the other bifacially restricted to the edges.

Metrical attributes:

Attribute	Range	$\bar{x}$
Length	31–50 mm	44.6 mm
Maximum width	18–38 mm	26.8 mm
Thickness	7–10 mm	8.4 mm
Weight	5–21 gm	12.4 gm

Stemmed (Plate II, figs. 14–16)
Comment: All four specimens are relatively complete.
Form attributes: Base configurations are all straight or nearly so. Stem configurations are slightly expanding (2), expanding (1), and straight (1). Cross-sections are elliptical (3) and plano-convex (1). Minimal retouch on one face occurs on a single specimen. The largest specimen (fig. 16) exhibits four burin blows. These consist of two sequential blows along one edge, starting at the shoulder, that are 36 mm and 32 mm long, respectively; one across the base 11 mm long; and an adjoining one down the side of the stem 11 mm long.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length	48–106 mm	66.3 mm
Base width	14–17 mm	15.8 mm
Neck width	14–16 mm	15.0 mm
Shoulder width	26–32 mm	29.3 mm
Stem length	11–15 mm	13.0 mm
Thickness	6–9 mm	7.8 mm
Weight	9–34 gm	17.3 gm

Scrapers

Scrapers have been separated into two major categories: large (10 gm $>$) and small ($<$ 10 gm).

Large Scrapers (21)

The following varieties of large scrapers are represented: end (12), random (6), uniface blade (2), and triangular (1).

End scrapers (Plate II, figs. 17–20)
Comment: One specimen has most of the end scraping face missing; otherwise all the specimens are relatively complete.

Form attributes: Scraping faces occur as follows: end only (6), end and a side (4), end and both sides (1), and both ends and both sides (1). One specimen possesses ventral retouch.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length (end face to base)	38–61 mm	46.6 mm
End scraping face width	25–46 mm	33.7 mm
Scraping face height	2–19 mm	7.5 mm
Weight	12–41 gm	23.8 gm

Random scrapers (Plate II, figs. 21 and 22)
Comment: As the designation implies, these large random scrapers lack any specific form, and represent large, irregular flakes that have been modified into scrapers.
Form attributes: Scraping face configurations consist of convex (4), straight (3), and concave (1). The largest specimen possesses three scraping faces, the rest only one.
Metrical attributes: Scraping face lengths range from 23 to 49 mm with a mean of 32.1 mm. Scraping face heights range from 3 to 6 mm with a mean of 4.1 mm. Weights range from 21 to 134 gm with a mean of 47.3 gm.

Uniface blade scrapers (Plate III, fig. 1)
Comment: These two specimens are identical to uniface blades except that their edges have been modified to produce scraping faces. They are, therefore, distinguished from the uniface blades proper and are classified as scrapers.
Form: Both are ovoid in form and have scraping faces running along one entire edge and a portion of the other edge.
Metrical attributes: Lengths are 67 mm and 58 mm, widths 50 mm and 37 mm, thicknesses 15 mm and 14 mm, weights 55 gm and 32 gm. The scraping face height ranges from 5 to 7 mm for the larger specimen, and is 3 mm for the smaller specimen.

Triangular scraper (Plate III, fig. 2)
This single triangular scraper has two scraping faces along the edges which converge at the apex. Length, width, and thickness are 48 mm, 37 mm, and 9 mm, respectively. Scraping face lengths are 47 mm and 41 mm, and scraping face heights are both 5 mm. Weight is 15 gm.

Small Scrapers (41)

The following varieties of small scrapers are represented: end (39), triangular (1), and side (1).

End scrapers
Form attributes: Scraping faces occur as follows: end only (30), end and side (6), and end and both sides (3). There is one case of ventral retouch and another case of extensive ventral–dorsal retouch. In two instances the end scraping face is markedly oblique rather than the usual symmetrically convex form.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length (end face to base)	10–38 mm	25.6 mm
End scraping face width	12–36 mm	22.4 mm
End scraping face height	2–9 mm	4.0 mm
Weight	1–10 gm	4.8 gm

Triangular scraper
This single specimen has two retouched faces which converge to a point. Lengths and heights of the scraping faces are 31 mm and 25 mm, and 2 mm and 1 mm, respectively. One scraping face is concave and the other is straight. Weight is 5 gm.

Side scraper
This single specimen has one retouched edge 25 mm long and 2 mm high. Weight is 4 gm.

Biface Blades (Plate III, figs. 3–7)

Comment: The 40 specimens consisted of the following: relatively complete (4), bases (11), point fragments (17), mid-section (5), and edge fragments (3). The point, mid-section, and edge fragments will not be given further consideration.
Form attributes: Base configurations are straight (8), convex (6), and irregular (1). The four complete biface blades consist of two asymmetrically triangular forms (figs. 3 and 4), an ovate specimen, and an irregular specimen with what appears to be broad incipient side-notches (fig. 7). One of the straight base fragments possesses a scraping face at the base.

Metrical attributes: The maximum widths and thicknesses of the eleven base fragments range from 25 to 62 mm, and 9 to 20 mm, with means of 42.3 mm and 13.0 mm, respectively. For the four complete biface blades, lengths range from 58 to 86 mm with a mean of 68.5 mm; maximum widths range from 27 to 49 mm with a mean of 36.0 mm; thicknesses range from 10 to 16 mm, with a mean of 13.0 mm; and weights range from 27 to 44 gm with a mean of 31.0 gm.

Uniface Blades (Plate III, figs. 8 and 9)

Two uniface blades, one complete and the other with the tip missing, are represented. In both cases the primary flaking is unifacial, and secondary retouch to produce scraping faces is lacking. The measurements of the complete specimen are: length 40 mm, width 24 mm, thickness 8 mm and weight 8 gm. The fragment is 35 mm wide and 14 mm thick. Both specimens are ovoid in form.

Flake Knife (Plate III, fig. 12)

This thin, ovoid flake has a portion of one edge bifacially retouched for a length of 26 mm. The opposite edge has an irregular scraping face 31 mm long and 2 mm high. Measurements are flake length 53 mm, width 31 mm, thickness 7 mm, and weight 12 gm.

Hammerstone

The single hammerstone is represented by a crudely flaked nodule possessing a single hammering facet at one end. It weighs 169 gm.

Wedges (Plate III, fig. 11)

Three of the wedges possess bipolar crushing, and one has crushing on all four edges. Lengths between crushed edges range from 14 to 20 mm with a mean of 16.8 mm. Thicknesses range from 4 to 7 mm with a mean of 5.8 mm. The measurements taken opposite the bipolar crushed edges range from 13 to 33 mm with a mean of 20.7 mm. Weights range from 2 to 3 gm with a mean of 2.3 gm.

Preforms (Plate III, fig. 10)

Both preforms are large, crude, bipointed, bifacially flaked specimens that appear to be too crude to have been effectively used as cutting implements. Lengths are 123 mm and 118 mm. Maximum widths are 64 mm and 58 mm. Thicknesses are 26 mm and 33 mm. Weights are 182 gm and 172 gm.

In addition to the above-mentioned specimens four plain body sherds, a rim sherd, and an arrowhead were recovered. The rim sherd belongs to the Sidey Notched pottery type (MacNeish 1952*a*). The arrowhead is stemmed and is basically an unmodified flake except for edge nibbling. Measurements are: length 24 mm, shoulder width 16 mm, base width 9 mm, stem length 4 mm, thickness 2 mm, and weight 2 gm. Both the arrowhead and the ceramics are regarded as Late Woodland materials which can probably be attributed to Algonkians.

BANCROFT SITE

The Bancroft site, 48°16'N and 79°25'W, is located in a small bay on the west shore of Lac Duparquet, approximately two miles south of the lake's outlet via Rivière Duparquet to Lake Abitibi. Meaningful observations could not be made on the frequency of edge-dulling or use-wear because of the percentage of water-worn specimens.

Table 2
Frequency of artifact classes (Bancroft site)

Class	f	%
Projectile points	5	9.6
Scrapers	25	48.1
Biface blades	14	26.9
Uniface blades	2	3.9
Flake knife	1	1.9
Core-scrapers	2	3.9
Hammerstone	1	1.9
Abrader–hammer	1	1.9
Flaked-ground item	1	1.9
Total	52	100.0

Projectile Points

Projectile points are represented by four base fragments and one mid-section. Further consideration will not be given to the mid-section fragment.

Lanceolate (Plate IV, figs. 1 and 2)
Comment: All four base fragments are attributed to lanceolate projectile points.
Form attributes: Base configurations are convex (2) and straight (2), with one of the straight bases consisting of a natural fracture plane with secondary thinning attempts. A flute occurs on one face of a convex-based specimen. Blade edges are slightly convex (2) and straight (2).
Metrical attributes: Basal widths range from 16 to 25 mm with a mean of 22 mm, and maximum widths range from 21 to 31 mm with a mean of 26.8 mm. Thicknesses range from 6 to 12 mm with a mean of 9.8 mm.

Scrapers

Scrapers are represented by 6 large (10 gm $>$) and 19 small ($<$ 10 gm) specimens.

Large Scrapers (Plate IV, figs. 6–8)
Of the six large scrapers only one has a distinctive form (end scraper—fig. 8), and even in this instance the form appears to be largely accidental. All but one specimen possess two scraping faces and one of these also has a bifacially-flaked knife edge. The single exception has a scraping face at the end of the flake. In one instance the two scraping faces occur on opposite sides of the flake. Configurations of the scraping faces are convex (9) and straight (2).

Lengths of scraping faces range from 17 to 95 mm with a mean of 40.7 mm. Heights range from 1 to 11 mm with a mean of 5.3 mm. Weights range from 12 to 70 gm with a mean of 47.2 gm.

Small Scrapers (Plate IV, figs. 9–11)
Four of the 19 small scrapers can be classified as end scrapers (fig. 10), and although a number of the remainder could be classified as side scrapers, this designation has been avoided as being too amorphous within the sample. Only two scrapers possess more than one scraping face. Both are end scrapers: one has three scraping faces and the other has two scraping faces. Ventral retouch is lacking and fire spalling is a frequent attribute on the flint specimens. Configurations of scraping faces are as follows: convex (11), straight (10), and concave (1).

Lengths of scraping faces range from 11 to 44 mm with a mean of 23.5 mm. Heights of scraping faces range from 1 to 4 mm with a mean of 2.2 mm. Weights range from 2 to 9 gm with a mean of 4.1 gm.

Biface Blades (Plate IV, figs. 3 and 4)

Five of the 14 biface blades are complete, and the fragments consist of 4 points, 3 bases, 1 mid-section, and 1 basal corner.

Specimen 1 (fig. 3) is triangular in outline with relatively straight edges and a convex base. Measurements are: length 63 mm, maximum width 45 mm, and thickness 14 mm; weight is 40 gm. This specimen could possibly also have functioned as a lance or projectile point

Specimen 2 is ovate in outline; its length, maximum width, thickness, and weight are 63 mm, 45 mm, 14 mm, and 40 gm.

Specimen 3 (fig. 4) is irregularly elliptical in form; its length, maximum width, thickness, and weight are 80 mm, 43 mm, 13 mm, and 40 gm.

Specimen 4 is rectanguloid in outline, with one edge consisting of a thick fracture face that has acted as a striking platform for removing flakes. Its length, width, thickness, and weight are 90 mm, 56 mm, 23 mm, and 148 gm.

Specimen 5 is bipointed although somewhat irregular in shape. It actually represents a very large edge fragment struck from a large biface blade and subsequently retouched. The subsequent retouch produced three contiguous scraping faces with the middle face occurring on the opposite side of the flake from the two flanking faces. The edge opposite the scraping faces is the original biface blade edge. Length and height of the three scraping faces are 24 mm by 7 mm, 24 mm by 2 mm, and 24 mm by 3 mm. Length, width, thickness, and weight are 97 mm, 54 mm, 22 mm, and 93 gm.

Uniface Blades (Plate IV, fig. 5)

Specimen 1 (illustrated) is somewhat elliptical in shape with one portion of the edge missing. Overall flaking occurs on one face and the opposite face is represented by a

single flake scar. The cross-section is strongly plano-convex. Length, width, and thickness are 98 mm, 40 mm, and 14 mm.

Specimen 2 is bipointed in outline with overall flaking on one face and minimal retouch near one end of the other face. The cross-section is somewhat plano-convex but has been affected by the marked curvature of the flake from which the artifact was made. Length, width, thickness, and weight are 69 mm, 35 mm, 12 mm, and 24 gm.

Flake Knife

This single specimen consists of a large flake which has been bifacially retouched along one edge although the cross-section is strongly plano-convex. It weighs 91 gm, and the retouched edge is 79 mm in length.

Core-Scrapers (Plate IV, fig. 12)

These two specimens, weighing 275 gm and 227 gm, are bifacial cores which have been retouched to function as large scrapers. Evidence of both purposeful and use retouch occurs along the entire plano-convex end of one and along the 75-mm-long edge of the other. The opposite edge of the last specimen also possesses bold bifacial flaking.

Hammerstone

The single quartzite hammerstone has flakes removed from one face and possesses minor hammering facets along three edges. It weighs 130 gm.

Abrader–Hammer

This rectangular schistose pebble has evidence of polish along one face and an edge. Both ends are partially flaked away, suggesting the additional use of the object as a hammerstone.

Flaked-Ground Item (Plate IV, fig. 13)

This rectanguloid item has been bifacially flaked and then ground on one face only. The grinding is strongest at the narrower bit end. Both lateral edges are extensively battered but not pecked. As with most of the tools from the site this object has been water worn and, therefore, use-wear cannot be accurately identified. The presumed cutting edge at the bit does, however, exhibit some impact fracturing. Metrical attributes are: length 97 mm, basal width 54 mm, bit width 34 mm, thickness 18 mm, and weight 140 gm.

PINDER'S PARADISE SITE

The Pinder's Paradise site, 48°16'N and 79°25'W, is located in a small bay less than 1.5 miles to the south of the Beach site at the north end of Lac Dasserat. Wear and grinding patterns cannot be accurately determined on most of the specimens owing to extensive water-tumbling.

Table 3
Frequency of artifact classes (Pinder's Paradise site)

Class	f	%
Projectile points	5	13.9
Scrapers	20	55.6
Biface blades	8	22.2
Uniface blade	1	2.8
Flake knife	1	2.8
Wedge	1	2.8
Total	36	100.1

Projectile Points

The condition of the five projectile points is as follows: 2 relatively complete, 2 bases, and 1 tip. Three side-notched and one lanceolate projectile points are involved.

Side-notched (Plate V, figs. 1–3)
Comment: Of the three specimens two are relatively complete and the other consists of a base.
Form attributes: Base configurations are straight, concave and convex. One specimen possesses a strongly bevelled blade.

Metrical attributes:

Attribute	Range	$\bar{x}$
Length		33.0 mm
Base width	19–26 mm	22.0 mm
Shoulder width	20–26 mm	23.0 mm
Neck width	16–19 mm	17.3 mm
Notch height	6–7 mm	6.7 mm
Notch depth	2–3 mm	2.3 mm
Thickness	6–8 mm	7.3 mm
Weight		5.0 gm

Lanceolate (Plate V, fig. 4)
The single lanceolate projectile point has a convex base, straight sides, and a plano-convex cross-section. Maximum width and thickness are 31 mm and 11 mm.

Scrapers

All but three of the scrapers weigh less than 10 gm and are therefore classified as small scrapers.

Large Scrapers (3) (Plate V, fig. 10)

Two of these specimens are end scrapers which possess single scraping faces at the end of the flake. The small specimen is ventrally retouched. The metrical attributes are as follows: length (47 mm and 35 mm), maximum width which occurs at the scraping face (35 mm and 27 mm), scraping face height (14 mm and 12 mm), and weight (25 gm and 12 gm).

The remaining specimen is made from a bifacial thick flake which has a scraping face 18 mm long and 2 mm high, retouched into one oblique edge. The bifacially-flaked edges of the specimen are blunted, apparently for the purpose of grasping the tool. Flake length, width, thickness, and weight are 59 mm, 22 mm, 12 mm, and 21 gm.

Small Scrapers (17)

Twelve specimens are classified as end scrapers and five specimens as side scrapers.

End scrapers (Plate V, figs. 11–16)
Form attributes: Scraping faces occur as follows: end only (6), end and a side (4), and end and both sides (2). Spoke-shave concavities occur on the two end corners of one specimen (fig. 12) and on one side of another specimen. Ventral retouch is lacking.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length (end face to base)	19–36 mm	24.9 mm
End scraping face width	17–31 mm	22.8 mm
End scraping face height	2–7 mm	4.3 mm
Weight	1–9 gm	4.5 gm

Side scrapers (Plate V, figs. 17 and 18)
Form attributes: Scraping faces occur as follows: single (3), double (1), and double but on opposite faces of the flake (1). Two of the single scraping faces are gently concave.
Metrical attributes:

Attribute	Range	$\bar{x}$
Flake length	17–64 mm	37.6 mm
Scraping face length	14–38 mm	25.9 mm
Scraping face height	2–4 mm	2.6 mm
Weight	1–9 gm	4.4 gm

Biface Blades (Plate V, figs. 6, 7, and 9)

The eight biface blades are represented by two examples each of the following: complete specimens, bases, point fragments, and mid-sections. Of the two base fragments, one is straight and the other is convex.

Specimen 1 (fig. 6) is lanceolate in form with a plano-convex cross-section. Length, maximum width, thickness, and weight are 128 mm, 42 mm, 17 mm, and 89 gm.

Specimen 2 (fig. 7) is ovate-acuminate in form and much cruder than specimen 1. A scraping face 57 mm long and 6 mm high occurs along one edge. Length, maximum width, thickness, and weight are 128 mm, 69 mm, 29 mm, and 255 gm.

Uniface Blade (Plate V, fig. 8)

The single uniface blade does have some retouch along the ventral face edge but not sufficient to classify it as a biface blade. The specimen is broken in half and is markedly plano-convex in cross-section. A 40-mm length of one edge has been retouched to produce a scraping face. Maximum width and thickness are 71 mm and 20 mm.

Side-Notched Flake Knife (Plate V, fig. 5)

This unusual specimen consists of a largely unaltered flake which has been side-notched for hafting. Minor bifacial retouch occurs along both edges at the tip, and the remaining portions of the edges exhibit use chipping. The asymmetrical form of the blade suggests that it functioned as a knife. The point of detachment was at the base, where some subsequent thinning is also apparent.

Metrical attributes are: length 63 mm, base width 24 mm, neck width 18 mm, shoulder width 29 mm, maximum width 31 mm, thickness 5 mm (blade) and 6 mm (base), and weight 11 gm.

Wedge (Plate V, fig. 19)

Although water-tumbled, this specimen possesses all the attributes of a wedge. Length between crushed edges, width, thickness, and weight are 24 mm, 25 mm, 9 mm, and 6 gm.

Ontario

Three northern Ontario sites are examined: Drunken Point, Fretz, and Eaka. The material from the Drunken Point site was collected by Mr. J. D. Reed of Swastika, Ontario, and was returned to him upon completion of the analysis. The Fretz site collection is in the possession of Mr. E. Fretz, the Timmins–Porcupine Chamber of Commerce, and the National Museum of Man. Through the kindness of Mr. Elroy Fretz of Shillington, Ontario, and Mr. A Campagnola of the Timmins–Porcupine Chamber of Commerce, I was able to analyze the entire collection. The Eaka site was excavated in 1962 with the assistance of G. F. MacDonald. Some additional material from the site, in the possession of Mr. Dean Starratt of Hudson, Ontario, was also examined.

DRUNKEN POINT SITE

The Drunken Point site, 47°46'N and 81°30'W, is located on the west side of the Southeast Arm of Mattagami Lake, approximately 12 miles northeast of Gogama. A rise in lake level due to dam construction washed out the site, with the result that most of the artifacts have been subjected to some degree of tumbling, and therefore it was not possible to make any comment on the occurrence of edge-dulling or use-wear. The collection was received in two parts: 1964 and 1965. Illustrations are restricted to the 1964 specimens.

Table 4
Frequency of artifact classes (Drunken Point site)

Class	f	%
Projectile points	18	24.7
Scrapers	38	52.1
Biface blades	9	12.3
Uniface blade	1	1.4
Wedges	2	2.7
Drills	2	2.7
Spoke-shave	1	1.4
Anvil stone	1	1.4
Ground slate fragment	1	1.4
Total	73	100.1

Projectile Points

Projectile points are represented by 9 complete specimens, 5 base fragments, and 4 tips. Lanceolate, side-notched, and stemmed forms are present.

Side-notched (Plate VI, figs. 1–3, 5, and 9)
Comment: Four specimens are complete and two specimens consist of base fragments.
Form attributes: All except one of the side-notched projectile points (fig. 5) are lanceolate in general form, and the notching, again with the aforementioned exception, is quite distinct. Base configurations are straight (5) and convex (1). In two instances the blade portion of the point is markedly bevelled.
Metrical attributes: The five lanceolate side-notched points have the following metrical attributes: length 55–65 mm with a mean of 58.7 mm, base width 22–35 mm with a mean of 27.8 mm, shoulder width 25–35 mm with a mean of 29.0 mm, notch height 3–7 mm with a mean of 4.8 mm, notch depth 3–5 mm with a mean of 3.8 mm, and thickness 6–8 mm with a mean of 6.6 mm. Only one of these specimens was weighed and its weight is 10 gm. The small side-notched point of markedly different form from the foregoing has a length, base width, shoulder width, notch height, notch depth, and thickness of 30 mm, 14 mm, 16 mm, 8 mm, 2 mm, and 6 mm, respectively.

Lanceolate (Plate VI, figs. 6 and 8)
The lanceolate specimens are represented by three complete specimens and a base. Base configurations are all straight. Metrical attributes are as follows: length 67–100 mm with a mean of 82.0 mm, base width 19–31 mm with a mean of 23.5 mm, and thickness 8–10 mm with a mean of 9 mm. In two instances the maximum widths, 23 mm and 34 mm, were not at the base. Weight, taken on two specimens, was 13 gm and 32 gm.

Trianguloid (Plate VI, fig. 4)
Two of the trianguloid projectile points are complete and one consists of a base fragment. Base configurations are convex (2) and straight (1). Metrical attributes are as follows: length 42 mm and 55 mm, base width 19–26 mm with a mean of 22.7 mm, and thickness 6–8 mm with a mean of 7.3 mm. One specimen was weighed and it is 9 gm.

Stemmed (Plate VI, fig. 7)
This single specimen is regarded as an expanding stem variety although it could also be interpreted as a broad side-notched form. The base is straight. Stem length, base width, shoulder width, neck width, and thickness are 28 mm, 29 mm, 28 mm, 20 mm, and 10 mm, respectively.

Scrapers

The data on the scrapers are presented somewhat erratically, as the original examination of the Drunken Point site collection was done at different times and on two portions of the collection, and the data were not recorded in accordance with a number of the criteria used in this report.

Large Scrapers (Plate VI, figs. 15–18; Plate VII, figs. 2, 3, 17, 19, 20, and 23; Plate VIII, figs. 2 and 5).

Eleven of the 12 large scrapers are classified as side scrapers, each of which possesses only a single scraping face, with the exception of Plate VIII, fig. 2, which possesses three scraping faces. A single large end scraper is represented (Plate VII, fig. 23), which possesses a scraping face at the end 25 mm long and 4 mm high. The length of the scraping faces ranges from 36 to 132 mm with a mean of 71.2 mm.

Small Scrapers (Plate VII, figs. 4–16)

Although none of the scrapers in the Drunken Point site collection were weighed, a relatively accurate separation of the large scrapers from the small scrapers was arrived at through both the illustrations and the metrical data. The following varieties of small scrapers are represented: end (19), side (6), and triangular (1).

End scrapers
Form attributes: Scraping faces occur as follows: end only (13), end and both sides (5), end and one side (1). Seven specimens are ventrally retouched. In one instance there is a possible graver spur at one corner of the end scraping face.

Metrical attributes:

Attribute	1964 (n–12)		1965 (n–7)	
	Range	$\bar{x}$	Range	$\bar{x}$
Length (end face to base)	16–43 mm	23.0 mm	14–36 mm	24.2 mm
End scraping face width	15–24 mm	19.1 mm	12–27 mm	19.4 mm
End scraping face height	1–5 mm	3.3 mm	2–6 mm	3.6 mm

Side scrapers

All six side scrapers possess a single scraping face. The following metrical data were recorded for five of the specimens: flake length 22–46 mm with a mean of 37.8 mm, length of retouched faces 17–45 mm with a mean of 33.4 mm, and height of the scraping face 1–4 mm with a mean of 2.0 mm.

Triangular scraper

This single specimen has two retouched faces, which converge to a point. The lengths of the two scraping faces are 21 mm and 22 mm, and the scraping face heights are both 2 mm.

Biface Blades (Plate VII, figs. 1, 21, and 22; Plate VIII, figs. 1, 3, 4, and 6)

Biface blades are represented by seven relatively complete specimens and two tip fragments. Detailed information is available for six of the seven relatively complete specimens.

Specimen 1 (Plate VII, fig. 21) is ovate-acuminate in outline and the convex base possesses a fracture plane with the subsequent removal of thinning flakes. Length, maximum width, thickness, and weight are 60 mm, 32 mm, 8 mm, and 15 gm. The cross-section tends to be plano-convex.

Specimen 2 (Plate VII, fig. 22) is asymmetrically lanceolate in form with a plano-convex cross-section. The convex edge has a scraping face for its entire length of 80 mm and a height of 4 mm. Length, maximum width, thickness, and weight are 83 mm, 38 mm, 13 mm, and 40 gm.

Specimen 3 (Plate VIII, fig. 1) is triangular in outline with a flattened elliptical cross-section. One edge consists of a scraping face 169 mm long and 6 mm high. Length, maximum width, thickness, and weight are 195 mm, 135 mm, 20 mm, and 594 gm.

Specimen 4 (Plate VIII, fig. 3) is asymmetrically triangular in form and tends to be plano-convex in cross-section. Length, maximum width, thickness, and weight are 51 mm, 26 mm, 7 mm, and 8 gm.

Specimen 5 (Plate VIII, fig. 4) has the tip missing but was probably ovate in form. Its cross-section approaches a diamond shape. The most convex edge possesses a somewhat erratic scraping face 43 mm long and 4 mm high. Estimated length, maximum width, thickness, and weight are 60 mm, 41 mm, 13 mm, and 31 gm.

Specimen 6 (Plate VIII, fig. 6) is ovate in form and its cross-section is approximately plano-convex. Length, width, thickness, and weight are 72 mm, 51 mm, 11 mm, and 48 gm.

Uniface Blade (Plate VII, fig. 18)

The single uniface blade is triangular in form with a marked plano-convex cross-section. Length, width, and thickness are 75 mm, 45 mm, and 10 mm.

Wedges

Both wedges possess the distinctive crushing on two opposite edges. Lengths, widths, and thicknesses are 27 mm and 19 mm, 26 mm and 15 mm, and 19 mm and 8 mm, respectively.

Drills (Plate VI, fig. 14)

Both drills are represented by tip fragments.

Spoke-Shave

The single spoke-shave consists of a 4-mm-long and 3-mm-deep scraping concavity chipped into a simple flake.

Anvil Stone

The anvil stone consists of a 17-mm-thick flat slate cobble with anvil pits on both

faces. It is ovate in form and measures 110 mm by 57 mm.

Ground Slate Item

This slate fragment with a diamond cross-section is ground along one edge and one side of the bevelled face. The fragment measures 57 mm by 38 mm and would not appear to represent a fragment from a finished tool.

FRETZ SITE

The Fretz site, 48°31'N and 80°44'W, is located on the west shore of Moose Lake approximately 30 miles east of Timmins, Ontario. Moose Lake has been created by a dam; originally the area was a large swamp penetrated by a stream.

For over 30 years the Fretz family, who first cultivated the land, have collected from the site. Indeed, an interesting collecting bias is reflected in the respective collections of Mr. Fretz, Sr., Mr. Elroy Fretz, Jr., and myself. These collections show a steady decrease in projectile points and a concomitant increase in scrapers. The major portion of the Fretz collection was donated to the Timmins–Porcupine Chamber of Commerce. In addition, Mr. Fretz, Jr., has a substantial collection, and a limited number of specimens were recovered from the site in 1968 by myself. The site was first recorded by Mr. Paul Sweetman of Toronto (Sweetman, n.d.).

There is no doubt that a substantial time span is represented at the site. Despite component mixture, however, the site has been analyzed as a single component since most of the artifacts are assignable to the Archaic period. Two gunflints and some Kaolin pipe fragments are the only items not described. No ceramics have ever been recovered from the site.

I would like to extend my appreciation to both the Timmins–Porcupine Chamber of Commerce and Mr. Fretz, Jr., of Shillington, Ontario, for allowing me to make a detailed examination of their specimens.

Table 5
Frequency of artifact classes (Fretz site)

Class	f	%
Projectile points	64	36.8
Scrapers	52	29.9
Biface blades	36	20.7
Uniface blades	4	2.3
Flake knives	2	1.1
Hammerstone	1	0.6
Drills	2	1.1
Ground slate fragments	2	1.1
Linear flake	1	0.6
Celts	5	2.9
Ground slate points	3	1.7
Ground slate knife	1	0.6
Abrader	1	0.6
Total	174	100.0

Projectile Points (64)

The 64 specimens are represented by the following varieties: side-notched (28), triangular (11), lanceolate (8), bipointed (6), stemmed (2), single-notched (2), corner-notched (1), and fragments (6).

Side-notched (Plate IX, figs. 1–10)
Comment: There are 16 relatively complete specimens and 12 base fragments. The range of variation appears to reflect a considerable time span: figure 10, for example, may be assigned to the Late Woodland period with a fair degree of certainty.
Form attributes: Blade edge configurations are straight (13) and convex (11). Base edge configurations are straight (14), convex (12), concave (1), and irregular (1). Minimal retouch is present on both faces in four instances and on one face in a single instance. Edge grinding is limited to one case of lateral and basal, and one case of lateral. There are four instances where straight fractures at the base of the projectile point exhibit secondary thinning flakes. A single instance of a bevelled blade is recorded.

Metrical attributes:

Attribute	Range	$\bar{x}$
Length	31–76 mm	45.0 mm
Base width	11–27 mm	19.0 mm
Neck width	9–21 mm	14.1 mm
Shoulder width	11–29 mm	21.7 mm
Notch height	2–12 mm	5.8 mm
Notch depth	1–7 mm	3.0 mm
Thickness	3–9 mm	6.1 mm
Weight	1–22 gm	7.1 gm

Triangular (Plate IX, figs. 11–15)
All 11 specimens are complete and range in outline from ovate-acuminate to triangular. Small lanceolate forms less than 56 mm in length are included in the category. Both the high incidence of edge grinding (use-wear) and the greater thickness suggest that a number of these specimens possibly functioned as knives rather than projectile points.
Form attributes: Blade edge configurations are convex (8) and straight (3). Base edge configurations are straight (5), convex (4), and irregular (2). There is a single instance of minimal retouch on one face. Edge-grinding occurs as follows: lateral grinding on one edge (6), lateral grinding on both edges (1), and basal and lateral grinding (1). Two cases are recorded of straight basal fractures which have subsequently been used as the striking platforms for removing basal thinning flakes.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length	35–55 mm	43.4 mm
Width	17–32 mm	23.0 mm
Thickness	5–12 mm	7.9 mm
Weight	3–16 gm	7.4 gm

Lanceolate (Plate IX, figs. 16–18)
Comment: Three specimens are complete, and although the tips are missing from the remaining five points it is possible to estimate their lengths and weights.
Form attributes: Blade edge configurations are convex (6) and straight (2). Base edge configurations are convex (4), straight (3), and concave (1). Grinding is represented by two specimens: one of lateral and basal grinding, and the other of lateral grinding only. One specimen has a scraping face at the base.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length	60–101 mm	84.5 mm
Width	22–36 mm	31.0 mm
Thickness	7–14 mm	9.6 mm
Weight	22–36 gm	26.5 gm

Bipointed (Plate IX, fig. 19; Plate X, fig. 1)
Comment: As three of the specimens are complete and the remaining three points lack only their extreme tips, length and weight estimates are possible.
Form attributes: In all instances blade edge configurations are convex. There are two cases of lateral grinding.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length	52–117 mm	79.7 mm
Width	24–35 mm	29.5 mm
Thickness	8–12 mm	9.5 mm
Weight	11–33 gm	21.7 gm

Stemmed (Plate X, figs. 2 and 3)
Comment: One specimen is complete, and both possess somewhat irregular stems.
Form attributes: Blade edge configurations are convex (1) and convex/straight (1). Base edge configurations are both straight. One specimen has lateral grinding.
Metrical attributes: length 72 mm, stem length 14 mm and 10 mm, shoulder width 25 mm and 30 mm, neck width both 16 mm, basal width 13 mm and 16 mm, stem length 14 mm and 10 mm, thickness 9 mm and 7 mm, weight 15 gm.

Single-notched (Plate X, fig. 5)
Comment: Both specimens are complete and both are similar in that they possess a side-notch on one side only.
Form attributes: Blade edge configurations are both convex, and base edge configurations are both straight. Both points have lateral grinding. One specimen has minimal retouch on one face. One specimen has a straight-basal fracture, which has been used subsequently as a striking platform for removing basal thinning flakes.

Metrical attributes: Length 58 mm and 40 mm, base width 18 mm and 13 mm, neck width 16 mm and 13 mm, thickness 8 mm and 5 mm, weight 10 gm and 4 gm.

Corner-notched (Plate X, fig. 4)
Comment: This single specimen is complete except for one basal corner.
Form attributes: Both the blade and base edges are convex. Lateral grinding is present.
Metrical attributes: Length 43 mm, base width (destroyed), neck width 11 mm, shoulder width 25 mm, notch height 10 mm, notch depth 4 mm, thickness 8 mm, weight 7 gm.

Fragments
The six projectile point fragments include two blade fragments which have been re-used as knives and possess strong use-wear along the edges.

Scrapers (52)

Of the scrapers, 28 are classified as large (10 gm >) and fall into the following varieties: end (13), side (10), random (4), and spoke-shave (1). Of the 24 small scrapers (< 10 gm), the following varieties occurred: end (13), side (3), random (6), and hafted (2).

Large Scrapers

End scrapers (Plate XI, figs. 3–7)
Form attributes: Scraping faces occur as follows: end and both sides (5), end only (4), end and one side (2), end and one side and a knife edge (bifacial) along the other side (1), and end and two knife edges along both sides (1). Four specimens possess a very acute angle at the end scraping face rather than the usual steeply bevelled face. One specimen possesses ventral retouch and another has an oblique end scraping face.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length	42–72 mm	50.2 mm
End scraping face width	24–53 mm	34.9 mm
End scraping face height	2–6 mm	4.2 mm
Weight	10–31 gm	16.2 gm

Side scrapers (Plate XI, figs. 8–10)
Form attributes: Scraping faces occur as follows: one edge (6), two edges (4). One specimen possesses a hafting stem (fig. 10).
Metrical attributes:

Attribute	Range	$\bar{x}$
Flake length	48–120 mm	79.8 mm
Scraping face length	20–120 mm	53.1 mm
Scraping face height	2–7 mm	3.9 mm
Weight	14–62 gm	34.3 gm

Random scrapers (Plate XI, fig. 11)
Of the four large random scrapers, one is very large relative to the other three (fig. 11). This large specimen has two scraping faces 110 mm and 80 mm in length, and 8 mm and 6 mm in height. The edge opposite the longest scraping face also exhibits crushing and grinding, apparently for purposes of hand-grasping. Its weight is 440 gm.

Of the remaining three scrapers, two have a single scraping face and one has two scraping faces. These scraping faces range in length from 22 to 28 mm with a mean of 24.5 mm, and range in height from 1 to 5 mm with a mean of 2.5 mm. Weight ranges from 18 to 42 gm with a mean of 26.7 gm.

Large spoke-shave (Plate XII, fig. 1)
One edge of this core fragment has a concave scraping face which is inferred to have functioned as a spoke-shave. Length of concavity is 17 mm and the height of the scraping face ranges from 1 to 4 mm. Weight is 16 gm.

Small Scrapers

End scrapers (Plate XII, figs. 2–5 and 11)
Form attributes: Scraping faces occur as follows: end only (7), end and one side (4), end and both sides (2). Two specimens possess ventral retouch and another has an oblique end scraping face. One specimen has a graver spur on a basal edge and another (fig. 11) has a graver spur on either side of the end scraping face.

Metrical attributes:

Attribute	Range	$\bar{x}$
Length	20–39 mm	28.1 mm
End scraping face width	16–36 mm	26.0 mm
End scraping face height	2–6 mm	4.3 mm
Weight	1–9 gm	4.9 gm

Random scrapers (Plate XII, figs. 6 and 7)
As the name implies, these six random scrapers lack any specific form. There are four specimens with single scraping faces and two specimens with two scraping faces. Scraping edge configurations are straight (3), concave (3), and convex (2).

Scraping face lengths range from 8 to 22 mm with a mean of 14.3 mm. Scraping face heights range from 1 to 3 mm with a mean of 1.9 mm. Weight ranges from 1 to 5 gm with a mean of 3.5 gm.

Side scrapers (Plate XII, fig. 8)
Three scrapers have the scraping faces along the side of the flake. One specimen has both sides retouched and two specimens have a single retouched edge. Scraping face configurations are straight (3) and convex (1).

Scraping face lengths range from 17 to 30 mm with a mean of 25.0 mm. Scraping face heights range from 1 to 2 mm with a mean of 1.5 mm. Weight ranges from 3 to 6 gm with a mean of 5.0 gm.

Hafted scrapers (Plate XII, figs. 9 and 10)
Both specimens are side-notched, although one is a simple flake with retouch limited to the edges and the other appears to represent a reworked projectile point.

Specimen 1 (fig. 9)—This specimen appears to represent a projectile point which has subsequently been reworked into an end scraper. It possesses lateral grinding, a slightly concave base, and irregular side-notching.

Measurements are: length 20 mm, basal width 14 mm, neck width 11 mm, shoulder width and scraping face width 19 mm, scraping face height 8 mm, and weight 3 gm.

Specimen 2 (fig. 10)—Retouch is restricted to the notches and the edges above the notches which produce alternate side scraping faces.

Measurements are: length 25 mm, basal width 11 mm, neck width 10 mm, shoulder width 14 mm, scraping face lengths 17 and 16 mm, scraping face height 1 mm, and weight 1 gm.

Biface Blades (Plate X, figs. 6–11)

Comment: Biface blades are represented by the following: complete (15), bases (8), points (10), edge fragments (2), and mid-sections (1). Only the complete specimens and the base fragments are described, although mention should be made of the mid-section fragment, which has a scraping face along one edge and a knife face along the opposite edge. Bases are included with reference to width and thickness on the metrical table.

Form attributes: Many of the complete specimens appear to have functioned as both knives and scrapers. If the lateral edge is predominantly biconvex it is regarded as a knife edge, whereas if the lateral edge is predominantly plano-convex, it is regarded as a scraper edge. Use-wear is considered only with reference to the knife edge. The following varieties were noted: knife use-wear on both sides (4), use-wear on one side and a scraping face on the other side (4), use-wear and a scraping face on both sides (3), use-wear on one side only (2), use-wear and a scraping face on both sides and a scraping face along the base (1), and no use-wear on either edge (1). Base configurations, including the base fragments, are as follows: convex (14), straight or oblique fracture with subsequent thinning flakes (5), and straight (4).

Metrical attributes:

Attribute	Range	$\bar{x}$
Length	69–177 mm	102.9 mm
Width	28–65 mm	45.2 mm
Thickness	8–24 mm	12.4 mm
Weight	22–216 gm	74.7 gm

Scraping faces on the complete biface blades, totalling 10 instances, range in length from 36 to 162 mm with a mean of 70.5 mm, and in scraping face height from 2 to 6 mm with a mean of 3.8 mm.

Uniface Blades (Plate XI, figs. 1 and 2)

All four uniface blades are complete: three are trianguloid and one is ovate. Two specimens possess use-wear on both sides. One specimen has use-wear along one side and alternating scraping faces (23 mm by 3 mm and 27 mm by 2 mm) along the opposite. The remaining specimen shows use-wear along one side only.

Apparently the metrical data on these specimens were either not recorded or were misplaced.

Flake Knives (Plate XII, figs. 12 and 13)

Specimen 1—One edge of this large flake has been bifacially flaked to produce a cutting edge, which exhibits evidence of extensive use-wear. Flake length and knife edge length are both 114 mm. Thickness and weight are 9 mm and 61 gm.

Specimen 2—Both edges of this small flake are bifacially retouched and retouch is restricted to the edges. Lengths of the cutting edges, both of which exhibit use-wear, are 34 mm and 30 mm. Thickness and weight are 3 mm and 1 gm.

Drills (Plate XII, figs. 14 and 15)

Both drills are lacking their tips, show use-wear along their lateral edges, and possess expanded bases. One also exhibits strong lateral grinding of the basal section. Approximate lengths are 56 mm and 67 mm, and maximum basal widths are 21 mm and 24 mm. Thicknesses are 9 mm and 7 mm.

Linear Flake (Plate XII, fig. 16)

A single linear flake possessing a prepared striking edge was recovered. It is 33 mm long, 13 mm wide, 6 mm thick, and has a triangular cross-section. This single specimen hardly argues for the presence of a prepared core-blade industry at the site and is regarded as a fortuitous form.

Celts (Plate XII, figs. 18–20)

Celts consist of a gouge (fig. 19), an axe (fig. 20), a chisel (fig. 18), and two poll fragments. In addition there is a flaked fragment which probably represents a celt preform.

The gouge is a full-grooved class II variety (Wright 1962: 126) and even possesses a secondary groove within the major groove. The poll is pointed, and complete grinding has removed all evidence of flaking or pecking. Its measurements are: length 150 mm, bit width 42 mm, bit depth 24 mm, and weight 178 gm.

The axe retains slight evidence of flaking although more evidence of pecking has survived the final grinding process. The bit is symmetrically bevelled and the cross-section is rectanguloid. Its length is 158 mm, bit width 47 mm, thickness 26 mm, and weight 340 gm.

The chisel is complete except for a portion of one face which has broken away. The poll is pointed, the bit symmetrically bevelled, and the cross-section ovate, almost elliptical. Final grinding has obliterated all but several earlier flake scars. Measurements are: length 84 mm, bit width approximately 30 mm, thickness 10 mm, and weight 26 gm.

The larger of the two poll fragments is 65 mm wide, and 19 mm thick, and has a remaining length of 147 mm. It possesses overall grinding and a rectanguloid cross-section and poll. The remaining poll has a few flake scars which have survived the final overall grinding. The cross-section is rectanguloid but the poll comes to a point. Width and thickness are 35 mm and 17 mm.

Ground Slate Points (Plate XII, figs. 17 and 22)

The large bayonet (fig. 22) has a gently contracting stem with a rounded base and a diamond cross-section somewhat flattened on one face. Both sides of the stem show fine scoring marks which were apparently intended to assist hafting. Stem length, width, and thickness are 52 mm, 26 mm, and 13 mm, respectively.

The complete specimen is small and may represent a projectile point (fig. 17). It belongs to the simple class of the Ontario bayonet (Wright 1962: 135–36). Some old flake scars and the apparent secondary modification of the base suggest that it may represent a reworked point from a larger bayonet. The cross-section is an asymmetric diamond shape, almost plano-convex. On the dorsal face the ground V, with its apex at the medial ridge and its base at the basal corners, duplicates the Ontario bayonet

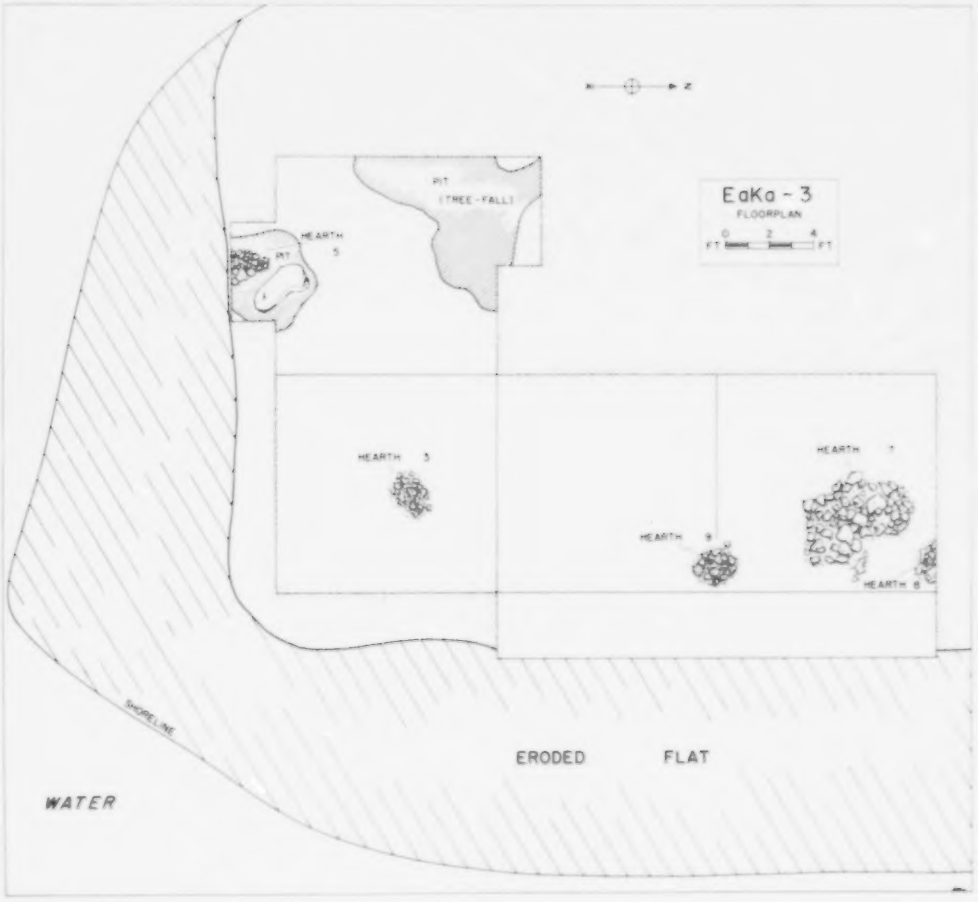


Figure 2
Eaka site floor plan

wedge-hafting technique. Measurements are as follows: length 80 mm, basal width 13 mm, maximum width 18 mm, thickness 9 mm, and weight 15 gm.

The remaining specimen is a mid-section fragment of a ground slate bayonet or point with a flattened symmetrical diamond cross-section. It is 27 mm wide and 7 mm thick.

Ground Slate Knife (Plate XII, fig. 21)

This fragment has been somewhat erratically flaked and ground. The only extensive evidence of grinding is a 37-mm-long section of the convex edge starting at the tip. The grinding is bevelled in a plano-convex fashion 3 mm in height, suggesting that the tool may actually have functioned as a scraper.

Ground Slate Fragments

One specimen is a flake with one face and an edge exhibiting grinding. Subsequent to its breakage the natural wedge-shaped edge was used for scraping and shows use-wear. The remaining specimen is a flake from a ground slate tool.

Hammerstone

The single hammerstone consists of a naturally circular, igneous cobble which possesses an encircling hammering facet. It measures 63 mm by 60 mm, is 36 mm thick and weighs 224 gm.

Abrader

This rectangular, schistose abrader is broken across the middle. The surviving end exhibits some grinding. Use-wear, however, is most pronounced on one face and both lateral edges. Width and thickness are 38 mm and 8 mm.

EAKA SITE

The Eaka site (EaKa-3), 50°07'N–92°03'W, is situated on a small clay island approximately two miles downstream from Pelican Falls on the English River. Before a dam raised the water level the island was connected to the nearby mainland by a narrow isthmus.

In 1962, assisted by G. F. MacDonald, I excavated four 10-ft squares,* one 3-ft by 20-ft trench, and two minor extensions off one of the squares necessary to expose features. The site is stratified and contains Middle Woodland, Late Woodland, and historic materials superpositionally above the Archaic component, which represents the major occupation at the site. The Archaic deposit was encountered at a depth of approximately 5 in. and averaged 6 in. in thickness. Raw bone preservation was totally lacking and, due to both extensive tree-fall action and forest fire activity, no trustworthy carbon-14 samples were recovered. Tree-fall action may also have resulted in some cultural mixture, although, for the most part, the Late Woodland and historic material was limited to the sod layer. The Middle Woodland material occurred directly below the sod and on top of the Archaic deposit.

Five hearths and two pits can be assigned to the Archaic component (Figure 2). All the hearths consisted of a concentration of firestones and were generally irregular in outline. One of the hearths occurred in a pit and the remainder had been built on the original occupational surface. Only three (Figure 2: hearths 3, 7, and 9) were completely exposed and these were approximately circular with diameters of 2 ft, 2.5 ft, and 1 ft, respectively. Three of the hearths were sterile; hearth 3 contained flakes; and hearth 7 contained flakes, carbonized bone, and one scraper. One pit consisted of a tree-fall depression that was used as a refuse receptacle by the Archaic occupants. The feature, very irregular in outline, attained a maximum depth of 28 in. In addition to firestone fragments, chipping detritus, and carbonized bones, the feature contained two hammerstones, two scrapers, three abraders, two copper barbs, and a large hammered copper nugget. The remaining pit appears to have been intentionally excavated. Although not completely exposed and somewhat irregular in outline, it appears to have been roughly 4.5 ft in diameter and 21 in. in depth. In addition to hearth 5 the pit contained a large boulder. Refuse was lacking.

*An earlier report dealing with the Middle Woodland occupation of the site incorrectly states that three 10-ft squares were excavated (Wright 1967: 80).

Table 6*
Frequency of artifact classes (Eaka site)

Class	f	%
Projectile points	14	12.5
Scrapers	41	36.6
Biface blades	18	16.1
Uniface blades	3	2.7
Flake knives	2	1.8
Wedges	5	4.5
Hammerstones	5	4.5
Core-scrapers	4	3.6
Ground slate fragment	1	0.9
Abraders	6	5.4
Pebble knife	1	0.9
Backed flake knives	2	1.8
Mano	1	0.9
Biface celt	1	0.9
Paintstones	2	1.8
Flaked adze	1	0.9
Copper fish-hook	1	0.9
Copper barbs	3	2.7
Copper gaff	1	0.9
Total	112	100.3

*The specimens from the collection of Mr. Dean Starratt of Hudson, Ontario, are described separately on page 27, but they are included in the table.

Projectile Points

The projectile points consist of lanceolate (3), stemmed (3), side-notched (1), and corner-notched (1) varieties, and three unanalyzable fragments.

Lanceolate (Plate XIII, figs. 1 and 2)

All three lanceolate projectile points are represented by bases. Base configurations are convex (2) and straight (1), and cross-sections are plano-convex (2) and elliptical (1). All three specimens possess basal and lateral grinding.

Width ranges from 24 to 36 mm with a mean of 29.0 mm; and thickness ranges from 7 to 8 mm with a mean of 7.3 mm.

Stemmed (Plate XIII, figs. 3 and 4)

Form attributes: All three stemmed projectile points are complete: two have relatively straight-sided stems and the remaining specimen has an expanding stem. Base configurations are all straight with one consisting of a straight fracture. Basal and lateral grinding is present on all three points. Two of the points possess grinding or use-wear along the entire lengths of both blade edges, suggesting that they may have functioned as knives. The asymmetric blade of one of these specimens adds to the possibility that it functioned as a knife. The remaining point (fig. 3) was made from a slab of schistose, and the smooth faces of the point either may represent the naturally polished schistose surface or may have been ground. If the latter, then the chipping took place subsequent to the grinding. Cross-sections are elliptical (2) and plano-convex (1).

Metrical attributes:

Attribute	Range	$\bar{x}$
Length	50–60 mm	54.0 mm
Basal width	10–16 mm	12.3 mm
Neck width	9–16 mm	13.0 mm
Shoulder width	17–26 mm	22.0 mm
Thickness	6–8 mm	7.0 mm
Weight	8–10 gm	9.0 gm

Side-notched (Plate XIII, fig. 5)

This basal fragment has a slightly concave base, parallel blade edges, strong basal grinding, and lighter lateral grinding. The cross-section is elliptical.

Measurements are: basal width 21 mm, neck width 17 mm, shoulder width 24 mm, maximum width 26 mm, thickness 8 mm.

Corner-notched (Plate XIII, fig. 6)

This incomplete basal fragment has a convex base and lateral grinding along the one surviving edge. The base was retouched into a scraper after breakage. Neck width and thickness, the only possible measurements, are 15 mm and 6 mm.

Scrapers

Large Scrapers (Plate XIV, figs. 1–5)

Only three of the 15 large scrapers appear to have a specific form. With the remainder the apparently random shape of the flake or fragment determined the form. Of the three formed scrapers one is rectanguloid (fig. 4) with retouch on three edges. Another is a small biface with scraping faces at both ends but on opposite faces (fig. 5). The final formed specimen is hump-backed with very steep retouch at one end and along two

sides. The occurrence of scraping faces is as follows: one (10), two (1), and three (4). The configurations of the scraping faces are straight (13) and convex (2).

Scraping face lengths range from 16 to 135 mm with a mean of 44.8 mm. Scraping face heights range from 2 to 20 mm with a mean of 6.7 mm. Weight ranges from 12 to 344 gm with a mean of 72.7 gm.

Small Scrapers (Plate XIV, figs. 6–14)
Of the 26 small scrapers (< 10 gm) seven are classified as end scrapers (figs. 6 and 7), three as side scrapers (figs. 9 and 10), and one as a stemmed concave side scraper (fig. 8). The remainder consist of relatively random flakes or fragments that are too small to be recognizable as any purposeful form.

Configurations of the scraping faces are convex (18), straight (11), and concave (3); all three scrapers with a concave face also possess additional scraping faces. The number of scraping faces is as follows: one (21), two (4), and three (1). In only one instance did scraping faces on alternate sides of the flake occur. One scraper possesses a bifacial knife edge 22 mm long opposite the scraping face.

Scraping face lengths range from 11 to 37 mm with a mean of 23.1 mm, and scraping face heights range from 1 to 8 mm with a mean of 3.2 mm. Weights range from 1 to 8 gm with a mean of 3.5 gm.

Metrical data on the small end scrapers are as follows: length 17–29 mm (22.1 mm), width of end scraping face 16–25 mm (20.7 mm), height of end scraping face 2–8 mm (4.6 mm), and weight 1–7 gm (3.7 gm).

Biface Blades (Plate XIII, figs. 7–12)

Of the 18 biface blades 9 are relatively complete. The remainder consist of three base fragments, four edge fragments, and two tips. Form does not appear to have been an important criterion. Only one of the complete specimens does not exhibit use-wear along an edge or edges, and as it is one of the cruder specimens it may actually represent a preform. Another specimen has a 58-mm-long scraping face along a portion of one edge.

With reference to the fragments, all but three show varying degrees of use-wear, and of these, two are too small for effective observation of this trait. Two of the edge fragments possess post-fracture flaking on one of the broken edges, suggesting that they served a function similar to that of the flake knives.

Metrical attributes:

Attribute	Range	$\bar{x}$
Length	45–109 mm	78.8 mm
Width	22–64 mm	45.9 mm
Thickness	9–24 mm	14.9 mm
Weight	10–133 gm	70.3 gm

Uniface Blades (Plate XIII, figs. 13 and 14)

The three uniface blades are all of different forms—lanceolate, ovate, and irregular. Use-wear is present on all edges except for a portion of one side of the largest specimen. Unlike the other tools from the site, the largest uniface blade (fig. 14) had been manufactured from a large water-worn cobble. The largely unretouched surface consists of the original cobble cortex. Metrical data on the ovate and irregular specimens are as follows: length 156 mm and 119 mm, maximum width 87 mm and 44 mm, thickness 38 mm and 25 mm, and weight 514 gm and 138 gm, respectively. The lanceolate specimen was placed on exhibit before measurements were taken.

Flake Knives (Plate XIV, fig. 19)

Both specimens consist of large flakes with one edge bifacially retouched to produce a knife. Use-wear is extensive on one specimen and moderate on the other. Length of retouched edge and weight of flakes are 102 mm and 62 mm, and 114 gm and 36 gm, respectively.

Wedges (Plate XIV, figs. 15 and 16)

Of the five wedges, one has all four edges crushed and the others have two opposing edges crushed.

Metrical attributes:

Attribute	Range	$\bar{x}$
Distance between crushed edges (length)	18–47 mm	29.0 mm
Width	15–42 mm	24.8 mm
Thickness	6–13 mm	10.6 mm
Weight	2–39 gm	13.6 gm

Pebble Knife (Plate XIV, fig. 18)

This quartz pebble has been retouched at one end, leaving the other end unmodified. Although the retouch is bifacial, it tends to be plano-convex in cross-section. Weight is 67 gm.

Backed Flake Knives (Plate XIV, fig. 17)

Retouch is concentrated on the thick edge of these two long flakes, apparently to dull the edges to facilitate grasping. In one instance the retouch is bifacial, and in the other unifacial. The cutting edges are naturally sharp edges which exhibit use-wear and erratic use-flakes. Measurements are: length 105 mm and 57 mm, width 54 mm and 20 mm, and thickness 16 mm and 6 mm; weight is 123 gm and 9 gm.

Core-Scrapers (Plate XV, fig. 1)

Two of the four specimens may not have been originally used as cores to obtain flakes, but may simply represent large blocks retouched to produce large, heavy scrapers. In three instances a clear attempt has been made to blunt the edge opposite the scraping face in order to dull the portion of the tool held by the hand. On the fourth specimen a natural fracture plane provides the hand grip. The plano-convex scraping faces have been produced by primary retouch and the faces are convex (3) and straight (1). Use-wear is apparent on all four specimens.

As the tools are very crude the following measurements are only approximate: length of scraping faces, from 70 to 122 mm with a mean of 100 mm; and height of scraping faces, from 5 to 38 mm with a mean of 20.8 mm.

Hammerstones

Three of the hammerstones possess one major hammering facet and the remaining two have two such facets at opposite ends. All are natural cobbles possessing only use-modification. Weight ranges from 125 to 421 gm with a mean of 334.6 gm.

Mano (Plate XV, fig. 5)

This ovate, almost circular, flat cobble exhibits evidence of grinding on both faces. Two ends also possess hammering facets. Weight is 524 gm.

Paintstones

Paintstones are represented by an unmodified fragment of rock rich in red ochre and by one small ochre nodule.

Abraders (Plate XV, figs. 3 and 4)

Five of the six abraders appear to be fairly complete, and the remaining specimen is represented by a small fragment split off from the surface. Two have use-wear on both faces and three have a polish on only one face. All five complete specimens are rectanguloid in shape and two have been chipped around the entire edge to produce the desired form (fig. 3). One naturally rectanguloid specimen (fig. 4) had been roughly flaked at both ends and the presence of use-wear suggests that the ends had served a scraping function.

Metrical attributes:

Attribute	Range	$\bar{x}$
Length	121–130 mm	125.4 mm
Width	41–63 mm	52.6 mm
Thickness	10–17 mm	13.0 mm
Weight	108–218 gm	159.0 gm

Flaked Adze (Plate XV, fig. 2)

Both lateral edges of this large bifacially flaked tool are extensively battered, apparently a dulling procedure. One face retains a portion of the original pebble cortex. The broader or bit end has been bevelled by flaking and the resulting adze bit exhibits

strong use-wear. Some use-wear also occurs at the pointed poll.

Length is 163 mm, bit width 53 mm, maximum width 63 mm, thickness 29 mm, and weight 468 gm.

Ground Item (Plate XV, fig. 6)

This specimen consists of a flat slab of schistose roughly semilunar in shape and lacking one end. Grinding occurs on both faces and along the edges, which appear to have been flaked prior to grinding. Width and thickness are 32 mm and 4 mm.

Copper Fish-Hook (Plate XIV, fig. 20)

The copper fish-hook is circular in cross-section with a diameter of 3 mm and is sharply pointed at both ends. It is difficult to say which is the barb and which is the shank.

Copper Barbs (Plate XIV, fig. 21)

Of these three short copper barbs, two are pointed at both ends and one is pointed at a single end. It is only inferred that they functioned as the barbs in composite fish-hooks, since a number of other possible functions exist. Cross-sections are somewhat irregular but are more flattened than round. Lengths are 16 mm, 24 mm, and 26 mm.

Copper Nuggets (Plate XIV, fig. 22)

Of the four copper nuggets one consists of a number of nuggets hammered together. Their collective weight is 138 gm.

Starratt Collection Specimens (Plate I, fig. 3)

Mr. Dean Starratt of Hudson, Ontario, had collected from the site prior to our excavations. While I was in the area I visited Mr. Starratt and made a brief examination of his collection. Most of the specimens appear to relate to the Archaic component, and therefore a brief description of the poorly illustrated specimens in Plate I, fig. 3 is in order.

Specimen 1—This biface blade, measuring 93 mm by 59 mm, possesses strong grinding along the entire edge and at one end to produce a bit, and is therefore regarded as a biface celt.

Specimen 2—A nondescript core.

Specimen 3—This thin, triangular, side-notched projectile point can be assigned to the Late Woodland occupation.

Specimen 4—This trianguloid projectile point, 45 mm long and 21 mm wide, could belong to any of the three occupations.

Specimen 5—This asymmetrical, broadly side-notched projectile point is most likely Archaic. Its length is 43 mm, base width 12 mm, notch width 9 mm, and shoulder width 18 mm.

Specimen 6—Biface blade missing a portion of its base.

Specimen 7—This trianguloid projectile point is assigned to the Archaic component. Its length and basal width are 45 mm and 28 mm.

Specimen 8—The copper gaff, although small, is basically similar to other gaffs brought up in nets from Lake Superior. The similarities are not only in general form but also in the distal portion of the shank, consisting of a separate rod of copper that has been attached to the gaff proper. Length is 108 mm.

Specimen 9—The bipointed projectile point, 69 mm long and 24 mm wide, is assigned to the Archaic occupation.

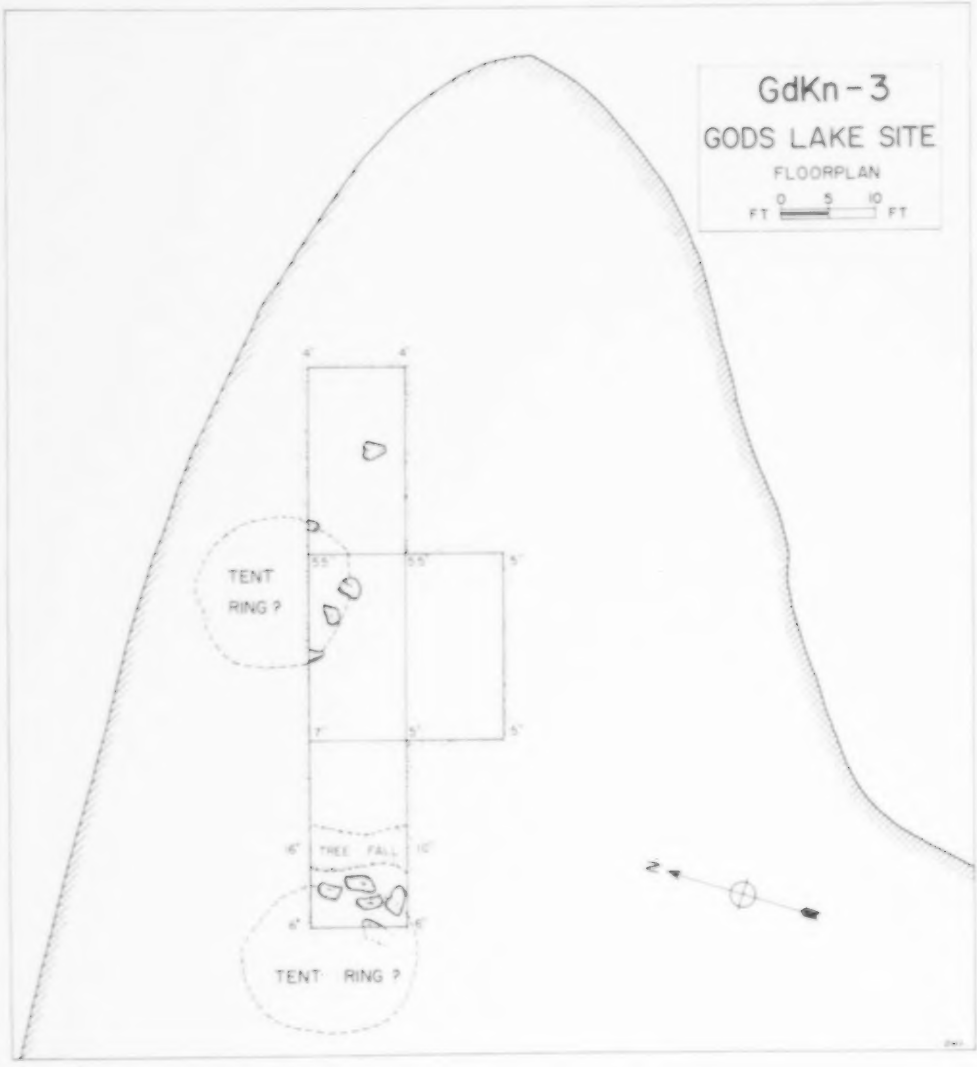


Figure 3
Gods Lake site floor plan

Manitoba

GODS LAKE SITE

The Gods Lake site, 54°37'30"N and 94°-15'10"W, is located on the end of a long clay point jutting out from the south shore of Gods Lake, Manitoba. Excavation units consisted of a 30-ft by 5-ft trench, divided into three 10-ft sections, and a single 10-ft by 5-ft sector. The major occupation of the site pertains to the Archaic period, although a thin deposit of Laurel tradition (Middle Woodland) and Selkirk focus (Late Woodland) materials rests directly upon the Archaic deposit. The Archaic component is both discrete and relatively continuous within a heavy clay deposit averaging three inches in thickness. Although the Middle Woodland and Late Woodland materials, occurring in the thin humic level and the turf, respectively, are generally mixed, cultural superposition was noted in a number of instances. Each of the sectors produced between 30 and 40 firestones; bone, with the exception of the odd carbonized fragment, is absent. Features were lacking except for the occurrence of a number of large rocks resting directly on the sterile subsoil, which may represent the remains of tent rings (Figure 3).

Of the 43 artifacts considered in the analysis, 23 were recovered from the surface. Both the nature of the artifacts involved and the limited representation of the later occupations at the site reduce the hazards of lumping the surface sample with the excavated sample. Some of the small end scrapers may, however, belong to either the Laurel tradition component or the Selkirk focus component.

Table 7
Frequency of artifact classes (Gods Lake site)

Class	f	%
Projectile point	1	2.3
Scrapers	21	48.8
Biface blades	10	23.3
Uniface blade	1	2.3
Flake knives	2	4.7
Wedges	2	4.7
Hammerstone	1	2.3
Core-scraper	1	2.3
Pebble knives	2	4.7
Mano	1	2.3
Paintstone	1	2.3
Total	43	100.0

Projectile point (Plate XVI, fig. 1)

The only projectile point recovered from the site consists of the base of a lanceolate point with a straight base and convex edges. Lateral and basal grinding are both present, and the base width and thickness measurements are 18 mm and 5 mm. The cross-section is elliptical.

Scrapers (21)

Large Scrapers (Plate XVI, figs. 7–13)

Of the 13 large scrapers (10 gm>) only one has a distinctive form, and it is classified as an end scraper (fig. 7).

Form attributes: The scraping faces present are as follows: one (9), two (3), and three (1). Scraping face configurations are straight (14) and convex (4). One thick scraper made from a core possesses three projections which exhibit use-wear and probably functioned as gravers (fig. 10). Another scraper has a similar projection at the opposite end from the scraping face, and a third specimen has two basal projections which probably functioned as gravers. The three scraping faces present on one specimen appear on alternate sides of the flake (fig. 8).

Metrical attributes:

Attribute	Range	$\bar{x}$
Scraping face length	26–107 mm	55.8 mm
Scraping face height	2–16 mm	6.8 mm
Weight	12–435 gm	105.2 gm

Small Scrapers

The small scrapers weighing less than 10 gm exhibit far more purposeful form than was the case with the large scrapers. Scraper form varieties are as follows: end (4), ovate (2), exhausted core (1), and random (1).

End scrapers (Plate XVI, figs. 2–5)
Of the four end scrapers, three possess retouch at the end only and one has been retouched at the end and along one side. Ventral retouch is absent; fire spalling occurs on the two flint specimens. Both flint specimens (figs. 2 and 5) also possess spur-like projections on one edge adjacent to the end scraping face.

End scraping face widths range from 20 to 35 mm with a mean of 27.5 mm; and scraping face heights are 4 mm except for one specimen which has a scraping face height of 5 mm. Lengths (base to end of scraping face) range from 20 to 45 mm with a mean of 28.5 mm. Weight ranges from 3 to 9 gm with a mean of 5.5 gm.

Ovate scrapers (Plate XVI, fig. 6)
One specimen is complete and the other is missing a lateral edge. The complete specimen has end scraping faces at either end which occur on alternate sides of the flake. Both sides also have been retouched to form scraping faces. Length, width, and height of end scraping faces are 27 mm, 21 mm, and 3–5 mm. The fragmented specimen is extensively heat spalled and retouch occurs at both ends and along the one surviving edge. Flake lengths and height of the end scraping faces are 33 mm and 4–6 mm.

Exhausted core-scraper
Several linear flakes appear to have been struck from this nodular flint core, but the edge has been then retouched in a fashion that is not consistent with core-edge crushing associated with blade removal. The specimen is regarded as an exhausted core which has been subsequently modified into a scraper.

Random scraper
This random flake has one end 17 mm wide retouched into a scraping face 3 mm high. Two slight concavities chipped into the scraping face have produced a small medial spur and two lateral edge spurs, which exhibit use-wear and probably functioned as gravers.

Biface Blades (Plate XVII, figs. 1–3)

Biface blades are represented by four complete specimens, two mid-section fragments, two edge fragments, one base, and a tip. The complete specimens range from ovate to ovate-acuminate in form. On three of the complete specimens use-wear occurs along both lateral edges. The remaining complete specimen has extensive dulling wear along one edge, and the opposite edge has been retouched into a scraping face. One of the mid-section fragments has been modified after breakage, with one of the original blade edges being retouched to form a scraper.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length	82–114 mm	105.0 mm
Width	42–71 mm	60.0 mm
Thickness	15–27 mm	23.7 mm
Weight	78–192 gm	146.8 gm

Uniface Blade (Plate XVII, fig. 4)

The single uniface blade is somewhat irregular in shape. Use-wear occurs along the lateral edges, but is most pronounced at the narrowest end. A portion of the original quartz cobble cortex is retained on the dorsal face. The specimen is 88 mm long, 59 mm wide, 26 mm thick, and 149 gm in weight.

Flake Knives (Plate XVII, fig. 7)

These two artifacts consist of flakes which have one edge bifacially flaked. Use-wear is moderate in both instances. Flake weights are 95 gm and 12 gm, and knive edge lengths are 64 mm and 32 mm.

Wedges (Plate XVII, figs. 5 and 6)

The largest wedge measures 54 mm between the crushed edges and 59 mm across the opposite dimension. Thickness and weight are 16 mm and 60 gm. A portion of the natural pebble face survives on one side, and two columnar fractures are present along one edge.

The smaller wedge measures 32 mm between the crushed edges and is 26 mm wide, 12 mm thick, and 11 gm in weight.

Hammerstone

The single hammerstone consists of a natural cobble with evidence of hammering around almost the entire edge. There is slight evidence of use as an anvil on one face and equally slight evidence of use as a grinding stone on the opposite face. The specimen is roughly circular; it measures 75 mm by 70 mm, and is 33 mm thick.

Core-Scraper (Plate XVII, fig. 8)

This large bifacial core, which retains a portion of the cobble cortex, exhibits retouch along one edge to produce a scraping face. The retouched edge is 85 mm in length and approximately 13 mm in height. There is extensive evidence of use-wear along the retouched edge and slighter evidence of use-wear along the other edges. The artifact measures 135 mm by 110 mm and is 53 mm thick.

Pebble Knives

In both instances these pebbles have been crudely flaked along one edge and the retouch ranges from bifacial to unifacial. Use-wear along the edges suggests that the tools functioned as simple cutting–scraping tools. They weigh 215 gm and 164 gm, and the retouched edges are 90 mm and 72 mm in length, respectively.

Mano (Plate XVII, fig. 9)

This large, granular, igneous cobble shows moderate evidence of grinding on both faces. The cobble is roughly ovate, measures 121 mm by 90 mm, and is 53 mm thick.

Paintstone

The single paintstone consists of a small (3 gm) unmodified red ochre nodule.

ELK ISLAND SITE

The Elk Island site, 54°38'N and 94°14'W, is located on a bedrock headland on the south shore of Elk Island, Gods Lake, Manitoba, approximately one mile northeast of the Gods Lake site. Excavation units consisted of one unit, 10 ft by 5 ft (Test Trench 1) and an irregular unit 10 ft long and 50 in. wide at one end and 27 in. at the other (Test Trench 2). Test Trench 2 was located between Test Trench 1 and a bedrock outcrop, and the width of the unit was determined by the configuration of the outcrop.

The major component at the site pertains to the Archaic period. Directly above the Archaic material, however, the thin (ca. 2 in.) black humus layer contained both prehistoric (Selkirk focus) and historic Cree artifacts. It was noted that in the upper humus layer most of the detritus consisted of small flint and quartz flakes, whereas in the Archaic deposit large quartz flakes were most common. The configuration of the Archaic deposit is very irregular and the debris appears to have accumulated in a trough in the bedrock, which was already partially filled by boulders, gravel, and clay. Most of the Archaic material, however, occurred in the first 6 in., although the odd item was encountered as deep as 1 ft. The only feature encountered was a somewhat irregular firestone hearth, which measured 48 in. by 44 in. and was nestled against the bedrock outcrop (Plate I, fig. 4). A uniface blade (Plate XVIII, fig. 7), the metate, and a few flakes were all that were recovered from the hearth, which occurred at an approximate depth of 3 in. A charcoal sample and a biface blade fragment obtained from beneath the hearth at a depth of 4–5½ in. provided a radiocarbon reading of 810 B.C. ± 240 (GaK–1860). Another charcoal sample from the same trench, recovered at a depth of 12 in. from beneath a boulder, provided a reading of 880 B.C. ± 210 (GaK–1861).

Table 8
Frequency of artifact classes (Elk Island site)

Class	f	%
Scrapers	5	35.7
Biface blades	3	21.4
Uniface blades	2	14.3
Wedges	2	14.3
Hammerstone	1	7.1
Metate	1	7.1
Total	14	99.9

Scrapers (Plate XVIII, figs. 3, 4, and 6)

Two of the five scrapers are classified as large scrapers since they weigh more than 10 gm.

Specimen 1 (fig. 6) consists of a large igneous block which has a scraping face at the end and some evidence of use-wear along one unworked edge. It weighs approximately 2 lb. and its measurements are: length 143 mm, width of scraping face 124 mm, height of scraping face 9 mm, and thickness 50 mm.

Specimen 2 (fig. 3) is a random quartz flake with a single scraping face 55 mm long and 2 mm high. It weighs 22 gm.

The remaining three scrapers are all random flake scrapers with a single scraping face, and weigh less than 10 gm. Scraping face lengths and heights of the three specimens are 16 mm and 6 mm, 21 mm and 6 mm, and 11 mm and 2 mm. Two specimens weigh 8 gm and the remaining scraper 3 gm.

Biface Blades (Plate XVIII, figs. 1 and 2)

The three biface blades are represented by one complete specimen, one tip fragment, and one edge fragment. The complete specimen (fig. 1) is ovate-acuminate in form and exhibits strong use-wear along one edge. It is 109 mm long, 63 mm wide, 23 mm thick, and 219 gm in weight.

The tip fragment lacked any evidence of use-wear although there is evidence that the broken edge had been used as a striking platform. Width at the break and thickness are 44 mm and 13 mm.

Uniface Blades (Plate XVIII, figs. 5 and 7)

Specimen 1 (fig. 7) consists of a large flake with one face completely retouched and the opposite face retouched along one edge only. The resulting bifacially flaked edge exhibits use-wear, and the opposite edge has been crushed, apparently to assist in grasping the tool. A point of percussion occurs at one end of this strongly plano-convex flake. It is 93 mm long, 64 mm wide, 23 mm thick, and weighs 138 gm.

Specimen 2 (fig. 5) is unusual in that it represents a flake that had been struck off a bifacial core. A clear remnant of the bifacial retouch occurs on the ventral face at the point of percussion. There is no evidence of use-wear although a 27-mm-long scraping face occurs along one edge. As is usual, the flake is markedly plano-convex in cross-section. It is 84 mm long, 51 mm wide, 16 mm thick, and weighs 66 gm.

Wedges (Plate XVIII, figs. 8 and 9)

The larger wedge measures 40 mm between the crushed edges, 36 mm wide and 19 mm thick, and weighs 32.7 gm. The same measurements for the smaller wedge are 16 mm, 14 mm and 8 mm; weight is 2 gm.

Hammerstone

The single hammerstone is represented by a natural cobble possessing hammering facets at two ends and a shallow anvil pit on the face. It weighs 573 gm.

Metate

Because of its bulk, the metate or grinding stone from the hearth was not retained. It measured 16.25 in. by 8.75 in. and was 2 in. thick. The outline was irregular but tended to be trianguloid. Extensive evidence of grinding was present on one face.

Keewatin District, N.W.T.

BLACKFLY COVE SITE

The Blackfly Cove site, 61°05'30"N and 100°48'W, is located on Ennadai Lake, Keewatin District, Northwest Territories. Dr. W. N. Irving collected specimens from the site in 1960 and 1963, and during the last season made a small test excavation. The site is situated on a knoll of partially exposed beach gravels at an elevation of 60 to 80 ft above the lake. Much of the material was recovered from the surface but the test excavation produced similar materials from beneath a distorted layer of forest fire charcoal which dated at 260 B.C. ±60 (WIS-29). Indeed, the similarities between the surface and excavated materials support the likelihood that the site is a single component occupation.

Table 9
Frequency of artifact classes (Blackfly Cove site)

Class	f	%
Projectile points	2	6.1
Scrapers	10	30.3
Biface blades	19	57.6
Uniface blade	1	3.0
Core-scraper	1	3.0
Total	33	100.0

Projectile Points (Plate XIX, fig. 1)

Projectile points are represented by one complete specimen and a tip fragment. The complete specimen is lanceolate in form with a marked convex base and convex blade edges. The mid-section profile is elliptical but the tip is somewhat bevelled. The specimen is 78 mm long, 28 mm wide, 7 mm thick, and weighs 16 gm.

Scrapers

Half of the 10 scrapers weigh more than 10 gm and are, therefore, classified as large scrapers.

Large Scrapers (Plate XIX, figs. 5–7 and 10)
Although form is not too specific the following varieties are represented: side (2), random (2), and end (1). Both side scrapers retain the original cobble cortex on most of the dorsal face (fig. 10). The single scraping faces along one edge are 54 mm and 58 mm long with scraping face heights of 8 mm and 2 mm respectively. The random scrapers both possess single scraping faces with one specimen having a straight edge (fig. 6) and the other a concave edge. Lengths of scraping faces are 33 mm and 26 mm and heights are 3 mm and 4 mm, respectively. The end scraper has a single scraping face 39 mm wide and 15 mm high and retains the cobble cortex on the ventral surface. Weights of the large scrapers range from 15 to 77 gm with a mean of 38.8 gm.

Small Scrapers
One specimen is represented by an edge fragment; the remainder have no particular form characteristics, except that three are somewhat trianguloid with retouch along one of the converging edges. Excluding the edge fragment these single scraping face specimens have the following metrical attributes: length of scraping face ranges from 15 to 30 mm with a mean of 22.8 mm; scraping face height ranges from 1 to 4 mm with a mean of 2.5 mm; and weight ranges from 2 to 7 gm with a mean of 4.5 gm.

Biface Blades (Plate XIX, figs. 2–4)

The 19 specimens consist of the following: complete (3), end or base fragments (6), edge fragments (8), corner fragment (1), and mid-section fragment (1).

The three complete specimens range from lanceolate to ovate in form. Use-wear is slight to moderate on two specimens, whereas the remaining biface blade has very strong dulling wear along one edge and a 61-mm-long scraping face on the other edge. One other complete biface blade also possesses a scraping face that is 52 mm long and consists of two contiguous edges chipped on opposite faces of the blade. Both of these biface blades with scraping faces are strongly plano-convex in cross-section. Scraping face heights are somewhat variable but tend to be approximately 3 mm.

The three specimens range in length from 67 to 76 mm with a mean of 72.7 mm, in

width from 31 to 48 mm with a mean of 39.3 mm, in thickness from 11 to 19 mm with a mean of 14.3 mm, and in weight from 28 to 53 gm with a mean of 38.3 gm.

Uniface Blade (Plate XIX, fig. 8)

This single uniface blade basal fragment possesses overall dorsal retouch and minor edge retouch on the otherwise unmodified ventral face. The cross-section is markedly plano-convex, and substantial use-wear occurs on both edges. Thickness is 12 mm.

Core-Scraper (Plate XIX, fig. 9)

The core-scraper consists of a cobble which has been split and ventrally flaked, with a portion of the dorsal surface represented by cortex and the remainder by large flake scars struck predominantly from one edge of the ventral face. Because of general abrasion (sand blasting?), use-wear cannot be ascertained, but the one worked edge closely resembles other core-scrapers. Length of the scraping face is 99 mm and height of flake removal from this edge is 60 mm. Weight is 1.75 lb.

DOT ISLAND SITE

The Dot Island site, 61°08'N and 100°53'W, is located on Ennadai Lake, Keewatin District, Northwest Territories. Dr. W. N. Irving, who kindly provided me with the collection, gathered the specimens from the surface of the site during the 1960 field season. Sand blasting prevents the identification of grinding or use-wear.

Table 10
Frequency of artifact classes (Dot Island site)

Class	f	%
Projectile points	16	31.4
Scrapers	20	39.2
Biface blades	12	23.5
Preform	1	2.0
Core-scraper	1	2.0
Biface celt	1	2.0
Total	51	100.1

Projectile Points

The condition of the 16 specimens is as follows: 3 complete, 8 bases, and 5 tip and blade fragments. The tip and blade fragments are not considered. The remaining 11 specimens are separated into lanceolate, side-notched, stemmed, and bipointed categories.

Lanceolate (Plate XX, fig. 2)
Comment: Both specimens are represented by base fragments.
Form attributes: Base configurations are convex, and blade edge configurations are relatively straight and parallel. Both specimens possess elliptical cross-sections.
Metrical attributes: Maximum width and thickness measurements are 34 mm and 12 mm, and 29 mm and 7 mm, respectively.

Side-notched (Plate XX, figs. 4 and 5)
Comment: Of the six specimens, one is complete.
Form attributes: Base configurations are convex (4), straight fracture (1), and straight fracture with subsequent thinning flakes (1). Cross-sections are elliptical (4), diamond (1), and unknown (1).
Metrical attributes:

Attribute	Range	$\bar{x}$
Length		52.0 mm
Base width	15–27 mm	19.8 mm
Notch width	13–21 mm	16.2 mm
Shoulder width	20–33 mm	23.4 mm
Notch height	8–11 mm	9.0 mm
Notch depth	2–5 mm	3.0 mm
Thickness	6–11 mm	8.0 mm
Weight		12 gm

Stemmed (Plate XX, fig. 3)
This single specimen possesses a straight, parallel side stem, a straight base, and an elliptical cross-section. Basal width is 22 mm, shoulder width 26 mm, stem length 16 mm, and thickness 8 mm.

Bipointed (Plate XX, fig. 1)
Of the two bipointed specimens, the smaller (not illustrated) is relatively crude and may represent a knife. Both specimens are complete and have pointed bases and elliptical cross-sections. They are 108 mm and 70 mm

in length, 36 mm and 26 mm in maximum width, 11 mm and 10 mm thick, and weigh 46 gm and 20 gm.

Scrapers (20)

Large Scrapers (10)

The following varieties of large scrapers are represented: end (4), random (4), and side (2).

End scrapers (Plate XX, fig. 8)
Form attributes: Scraping faces occur as follows: end only (2), end and a side (1), and end and both sides (1). The largest specimen, which could possibly be regarded as a scraping plane, possesses the natural cobble cortex on the ventral face.
Metrical attributes: The largest specimen has been recorded separately from the other scrapers since its gross dimensions would markedly alter the range and mean. This specimen has a length (end face to base) of 57 mm, an end scraping face width of 37 mm, a scraping face height of 29 mm, and a weight of 122 gm. For the other three specimens the following metrical attributes are recorded:

Attribute	Range	$\bar{x}$
Length (end face to base)	39–44 mm	41.3 mm
End scraping face width	22–28 mm	25.0 mm
Scraping face height	8–10 mm	8.7 mm
Weight	11–15 gm	12.7 gm

Random scrapers (Plate XX, fig. 9)
Form attributes: Of the four specimens, three possess single scraping faces and one possesses two scraping faces. Scraping face configurations are straight (3) and convex (2).
Metrical attributes:

Attribute	Range	$\bar{x}$
Scraping face length	20–66 mm	38.0 mm
Scraping face height	2–6 mm	3.8 mm
Weight	14–103 gm	41.3 gm

Side scrapers
Form attributes: The two side scrapers possess a single scraping face along one lateral edge. One specimen also possesses a bifacial knife edge at one end of the flake and appears to represent a combined scraper–knife tool.
Metrical attributes: The lengths and heights of the scraping face are 44 mm and 3 mm, and 34 mm and 4 mm, respectively. The knife edge at the end of one face is 33 mm and convex in form. Weights are 24 gm and 15 gm.

Small Scrapers (10)

The following varieties of small scrapers are represented: end (5), random (3), and side (2).

End scrapers (Plate XX, figs. 6 and 7)
Form attributes: Scraping faces occur as follows: end only (2), end and a side (1), and end and both sides (2). One specimen has a graver spur at one edge of the end scraping face.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length (end face to base)	18–28 mm	23.6 mm
End scraping face width	22–28 mm	24.2 mm
End scraping face height	4–6 mm	5.2 mm
Weight	2–6 gm	4.6 gm

Random scrapers (Plate XX, fig. 11)
Form attributes: All three specimens possess a single scraping face, although one scraper has most of the scraping face broken away. Individual scraping face configurations are straight, convex, and unknown.
Metrical attributes: Length and height of scraping faces range from 15 to 21 mm with a mean of 18 mm, and from 1 to 3 mm with a mean of 2.3 mm, respectively. Weight ranges from 2 to 4 gm with a mean of 3.3 gm.

Side scrapers (Plate XX, fig. 10)
Form attributes: Of the two small side scrapers, one has two lateral scraping faces and the other has a single scraping face. Scraping edge configurations are straight (2) and convex (1).
Metrical attributes: Length of scraping faces ranges from 22 to 33 mm with a mean of 29.0 mm, and height of scraping faces ranges from 2 to 3 mm with a mean of 2.3 mm. Weights are 4 gm and 8 gm.

Biface Blades (Plate XX, figs. 12–14)

Comment: The twelve biface blades are represented by the following: complete (3), bases (2), tips (2), lacking a small portion of the base (1), and edge and mid-section fragments (4).
Form attributes: Base configurations are convex (3), pointed (1), and straight fracture with subsequent thinning (1). The three complete specimens are ovate, bipointed, and trianguloid.
Metrical attributes: The three complete specimens range from 60 to 107 mm in length (mean 79.0 mm); 37 to 41 mm in width (mean 39.0 mm); 9 to 14 mm in thickness (mean 11.7 mm); and 37 to 46 gm in weight (mean 41.7 gm). The maximum width and thickness measurements for the two base fragments are 81 mm and 16 mm, and 37 mm and 12 mm.

Core-Scraper

The single core-scraper retains the original cobble cortex on its entire ventral surface. Only a small portion 46 mm long on one edge exhibits sharp retouching although a large section contiguous to this edge appears to have been struck off. The specimen possesses overall dorsal flaking, most of which appears to have been for purposes of flake retrieval. It measures 126 mm by 81 mm by 54 mm and weighs 553 gm.

Preform

The single preform is represented by an asymmetrical tip fragment.

Biface Celt (Plate XX, fig. 15)

Although severely sand-blasted and modified by weathering, this specimen appears to represent a biface blade with subsequent bit grinding. The bit is symmetrically bevelled and the specimen is 77 mm long, 50 mm in bit width, 16 mm thick and 70 gm in weight.

ABERDEEN SITE

The Aberdeen site is located at the west end of Aberdeen Lake on the Thelon River drainage, Keewatin District, Northwest Territories. The material was recovered from the site in 1958 by Dr. Elmer Harp, Jr., who describes the site as follows:

> At 64°37'20N., 99°49'35W., on the same bluff as AL-6 but extending for a distance of almost one-half mile opposite the island. This was a far more extensive site than AL-6, and I believe it would repay a planned excavation. Quartzite chips and 48 artifacts were found in a band extending 100 feet back from the edge of the bluff, and excavation of 4–5 square yards traced them to a sand and gravel surface which was overlain by 2–6 inches of black sandy soil and turf. Although no evidence of former dwellings was observed, the broad inventory of tool types obtained suggests a habitation area. As in the case of AL-6, the flat top of the bluff is 30–50 feet above the water-level in the narrows. There are numerous recent stone tent rings in the vicinity. *(Harp 1961: 21)**

Table 11
Frequency of artifact classes (Aberdeen site)

Class	f	%
Projectile points	10	22.2
Scrapers	18	40.0
Biface blades	12	26.7
Uniface blade	1	2.2
Wedge	1	2.2
Preforms	2	4.4
Linear flake	1	2.2
Total	45	99.9

Projectile Points

The condition of the ten projectile points is as follows: 1 complete, 6 bases, and 3 tip fragments. The seven specimens to be described belong to three categories: lanceolate, side-notched, and stemmed.

Lanceolate (Plate XXI, figs. 1 and 2)
Comment: All four specimens are represented by basal fragments.
Form attributes: Base configurations are convex (3) and oblique fracture with subsequent thinning (1). Blade edge configurations are straight (3) and convex (1). Cross-sections are elliptical (2), diamond (1), and plano-convex (1). One instance of lateral grinding is present as well as a single case of a bevelled blade.

*The writer's excavations at the site in 1969 are commented upon in Chapter III, page 55.

Keewatin District, N.W.T.

Metrical attributes:

Attribute	Range	$\bar{x}$
Base width	22–27 mm	24.5 mm
Maximum width	22–32 mm	27.8 mm
Thickness	8–11 mm	9.8 mm

Side-notched (Plate XXI, figs. 4 and 5)
Form attributes: As both specimens are illustrated, general form features need not be commented upon. Cross-sections are elliptical and plano-convex. Basal and lateral grinding are present on both specimens.
Metrical attributes: The complete specimen has the following measurements: length 46 mm, base width 20 mm, notched width 14 mm, shoulder width 21 mm, notch height 10 mm, notch depth 3 mm, and thickness 8 mm; it weighs 8 gm. The base fragment measurements are as follows: base width 17 mm, notch width 14 mm, shoulder width 21 mm, and thickness 8 mm.

Stemmed (Plate XXI, fig. 3)
Form attributes: The cross-section approaches diamond shape, and lateral grinding is found on the stem.
Metrical attributes: Base width is 15 mm, shoulder width 23 mm, stem length 15 mm, and thickness 10 mm.

Scrapers (18)

There are 12 large scrapers (10 gm >) and 6 small scrapers.

Large Scrapers

The following varieties of large scrapers are represented: end (5), random (4), and side (3).

End scrapers (Plate XXI, figs. 8–10)
Form attributes: Scraping faces occur as follows: end and both sides (4), and end only (1). One specimen possesses the natural cobble cortex on the ventral surface, and two specimens have a lop-sided appearance where the length axis is quite a way from bisecting the end scraping face (fig. 10).

Metrical attributes:

Attribute	Range	$\bar{x}$
Length (end face to base)	37–68 mm	45.8 mm
End scraping face width	32–41 mm	36.6 mm
End scraping face height	3–7 mm	4.4 mm
Weight	11–58 gm	23.8 gm

Random scrapers (Plate XXI, fig. 6)
Form attributes: One specimen has two scraping faces, the other three only a single scraping face. Scraping edge configurations are straight (3) and convex (2). A 30-mm-long edge of one specimen has been crushed and ground, apparently to assist grasping.
Metrical attributes:

Attribute	Range	$\bar{x}$
Scraping face length	29–115 mm	59.6 mm
Scraping face height	2–5 mm	3.6 mm
Weight	13–185 gm	84.5 gm

Side scrapers (Plate XXI, figs. 7 and 12)
Form attributes: Of the three large side scrapers, one has a single scraping face and the other two have two scraping faces. One of the latter specimens has retouch on alternate sides of the flake. Scraping face configurations are straight (3) and convex (2).
Metrical attributes:

Attribute	Range	$\bar{x}$
Scraping face length	25–70 mm	49.8 mm
Scraping face height	2–4 mm	2.8 mm
Weight	12–53 gm	29.7 gm

Small Scrapers (6)

All six scrapers weighing less than 10 gm are classified as end scrapers.

End scrapers (Plate XXI, fig. 11)
Form attributes: Scraping faces occur as follows: end only (2), end and both sides (3), end and one side (1). The illustrated scraper possesses a possible graver spur at one corner.

Metrical attributes:

Attribute	Range	$\bar{X}$
Length (end face to base)	25–42 mm	32.7 mm
End scraping face width	24–33 mm	28.2 mm
End scraping face height	3–6 mm	4.2 mm
Weight	5–9 gm	7.0 gm

Biface Blades (Plate XXI, fig. 13)

Comment: The 12 specimens consisted of the following: relatively complete (2), bases (2), tips (5), mid-sections (2), and edge fragment (1). The tips, mid-sections, and edge fragments will not be given further consideration.
Form attributes: Base configurations are all convex although, with one exception, somewhat irregular. The larger of the two complete biface blades retains a portion of the cobble cortex at the base and use-wear is present along both edges. The smaller specimen shows use-wear along one edge and has a marked plano-convex cross-section rather than the elliptical cross-section of the larger specimens. Some cortex is also retained on the dorsal surface.
Metrical attributes: The largest complete specimen measures 96 mm by 67 mm by 32 mm and weighs 233 gm, whereas the other complete specimen measures 47 mm by 35 mm by 11 mm and weighs 24 gm. The two base fragments are 13 mm thick, and 25 mm and 22 mm wide, respectively.

Uniface Blade (Plate XXI, fig. 14)

The single uniface blade is broken in half. Flake removal is typically unifacial and the cross-section is markedly plano-convex. Use-wear is particularly pronounced along one edge. Width and thickness measurements are 44 mm and 12 mm, respectively.

Wedge

The single wedge has been made on a biface blade fragment and evidence of crushing occurs on all four edges, although one corner of this square-shaped specimen is missing. It measures 38 mm by 36 mm, and is 10 mm thick. Weight is in excess of 15 gm.

Preforms

The larger of the two preforms is bifacially flaked, although markedly plano-convex in cross-section. Evidence of either use-wear or secondary retouch along the edges is lacking. Measurements are 113 mm by 60 mm by 35 mm, and weight is 218 gm. The smaller specimen is lacking one end and has been unifacially flaked, with the other face being represented by the natural cobble cortex. Evidence of grinding along one edge may pertain to flake removal rather than use-wear. Width and thickness measurements are 46 mm and 20 mm, respectively.

Linear Flake (Plate XXI, fig. 15)

The single linear flake was struck from a cobble using the cobble cortex as the striking platform (bottom of fig. 15). A sharp medial ridge is present, giving the flake a markedly triangular cross-section. Length, width at striking platform, thickness, and weight are 77 mm, 25 mm, 11 mm, and 23 gm. This single specimen is not regarded as evidence that a prepared core-blade technology was present at the site.

Chapter III Comparisons

Comparisons will first be made between the Shield Archaic components described in the previous chapter. On the basis of these comparisons an attempt will be made to outline the temporal and spatial variations and trends within the Shield Archaic tradition. This body of data will then be related to both published and unpublished information on sites regarded as belonging to the Shield Archaic. Secondly, with reference to the hypothesis that the Shield Archaic evolved from a late Palaeo-Indian culture base in the Northwest Territories, the tradition will be compared with late Palaeo-Indian sites (Harp 1961) located on the Thelon drainage, Keewatin District, N.W.T. Thirdly, the Shield Archaic will be compared with adjacent, contemporaneous assemblages in order to determine the possible nature of relationships. These adjacent complexes are three in number—the Laurentian Archaic to the southeast, the Plains Archaic to the southwest, and the Pre-Dorset to the north.

Shield Archaic Sites Described in Chapter II

Most of the eleven sites described in Chapter II produced relatively small samples of artifacts. This is particularly true for the Elk Island, Blackfly Cove, and Pinder's Paradise sites. Small samples, however, are a fact of life in Boreal Forest archaeology, and must be used if the prehistory of the area is ever to be understood. Presumably, errors in interpretation stemming from sample size will be rectified by future data. An equally ominous factor is the likelihood of various degrees of component mixture being represented in both the surface collections and the excavated collections. Hopefully, the factors of sample size and component mixture are not sufficiently disruptive to negate the establishment of both a very general chronology and some appreciation of the spatial variations within the Shield Archaic. It cannot be overemphasized that the major goal of the current study is to provide sufficient data to demonstrate the existence of the Shield Archaic as an assemblage that can be distinguished on archaeological grounds from other adjacent and contemporaneous assemblages. Data that will provide a relatively convincing understanding of the temporal and spatial developments within the Shield Archaic tradition are still very limited. The following attempt to outline these temporal and spatial developments is very tentative and is directly subject to the limitations in the data. Despite deviations, however, a number of temporal trends and spatial variations are apparent within the Shield Archaic.

Using a number of criteria, a tentative chronology of the eleven sites involved has been established. In view of the exceptional distribution of the Shield Archaic, certain regional variations can be expected to produce a somewhat erratic chronological sequence. These spatial variations will be examined separately on occasion, in order to note how the sites in Quebec, Ontario, Manitoba, and Keewatin differ from each other.

First, the frequency of general artifact classes will be considered for the Shield Archaic as a whole. This will be followed by an examination of these frequencies as they apply to the three provincial and one district site clusters. Similarly, the individual artifact

classes will first be examined for the Shield Archaic as a whole, to be followed by a consideration of variations within the Keewatin, Manitoba, Ontario, and Quebec site clusters.

FREQUENCY OF ARTIFACT CLASSES

Table 12 presents the frequencies of artifact classes for the eleven sites under consideration. The tentative chronology running from early to late is Blackfly Cove to Elk Island. Although there are some inconsistencies, the general trends through time indicate an increase in the frequency of projectile points and scrapers and a decrease in the frequency of biface blades. Both uniface blades and wedges maintain a low but fairly consistent frequency distribution through time. Flake knives also maintain a relatively consistent but low frequency occurrence.

In terms of the four site clusters (Keewatin, Manitoba, Ontario, and Quebec), the three Keewatin sites conform to the above generalization, whereas the two Manitoba sites agree only in the decreasing frequency of biface blades. Conversely, scraper frequencies decrease, and the single projectile point defies any comment. The three Ontario sites show an increase followed by a decrease for both projectile point and biface blade frequencies, whereas scrapers decrease and then increase sharply in frequency. Similarly, the three Quebec sites indicate an increase–decrease in projectile points and a decrease–increase in scrapers. Biface blade frequencies are constant and then decrease. The remaining artifact classes have too erratic a distribution and too low a frequency occurrence to make any pertinent statements at this level of inquiry.

Projectile Points

A total of 136 analyzable projectile points were recovered from ten of the eleven Shield Archaic sites. Such a small and widely dispersed sample does not readily lend itself to the establishment of types, and therefore the projectile points were separated into seven general forms—lanceolate, side-notched, trianguloid, stemmed, bipointed, corner-notched, and single-notched. Of these varieties only the first three have an appreciable representation (20 or more specimens). Table 13 presents the frequency of the seven projectile point varieties although it must be cautioned that only half of the sites produced more than ten analyzable specimens and that, therefore, some relative weighting is necessary.

In general, Table 13 indicates that lanceolate points decrease in frequency through time while side-notched points increase in frequency. Stemmed points show a decrease and bipointed points an erratic increase. Trianguloid points have a broken distribution. Both the corner-notched and single-notched varieties are represented by two specimens each; therefore no comment is possible other than noting that both varieties are restricted to two Ontario sites.

Projectile point form attributes are somewhat difficult to assess in terms of time–space significance. Most of the form attributes not only have a low occurrence, but in two instances a category of form attribute was not recorded for all the sites. Unfortunately the sites for which these data were not recorded cannot be conveniently re-examined. Despite limitations in the sample and recording methods, some general comments can be made concerning the form attributes of the projectile points.

Point cross-sections are generally elliptical although plano-convex cross-sections are not uncommon. Diamond cross-sections are rare. A temporal trend in cross-section form is not apparent.

Basal configurations are usually straight or convex; concave, oblique, or irregular base configurations are rare. Again, no particular temporal trends are noted except that the limited number of concave-based points all cluster in the middle of the site chronology (Beach, Eaka, Fretz, and Pinder's Paradise).

Lateral and/or basal grinding increases in frequency through time, although this observation is severely limited by the fact that the attribute of grinding could not be recognized on specimens from the Bancroft, Beach, Pinder's Paradise, Dot Island, and Drunken Point sites owing to water-tumbling or sand-blasting.

At six of the ten sites producing projectile points, specimens were found on which the base of the point was snapped off to produce a straight fracture, which was subsequently used as a striking platform to strike off basal thinning flakes. No particularly significant temporal trend for this attribute is noted.

Table 12
Frequency of artifact classes for eleven Shield Archaic sites

	Blackfly Cove		Gods Lake		Bancroft		Aberdeen		Beach		Eaka		Fretz		Pinder's Paradise		Dot Island		Drunken Point		Elk Island	
Artifact class	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Projectile points	2	6.0	1	2.0	5	10.0	10	22.0	31	22.0	14	13.0	64	37.0	5	14.0	16	31.0	18	25.0		
Scrapers	10	30.0	21	49.0	25	48.0	18	39.0	63	44.0	41	37.0	52	30.0	20	56.0	20	39.0	36	49.0	5	36.0
Biface blades	19	58.0	10	23.0	14	27.0	13	28.0	40	28.0	18	16.0	36	21.0	8	22.0	12	24.0	11	15.0	3	21.0
Uniface blades	1	3.0	1	2.0	2	4.0	1	2.0	2	1.0	3	3.0	4	2.0	1	3.0			1	1.0	2	14.0
Wedges			2	5.0			1	2.0	4	3.0	5	4.0			1	3.0			2	3.0	2	14.0
Flake knives			2	5.0	1	2.0			1	1.0	2	2.0	2	1.0	1	3.0						
Hammerstones			1	2.0	1	2.0			1	1.0	5	4.0	1	1.0							1	7.0
Core-scrapers	1	3.0	1	2.0	2	4.0					4	4.0					1	2.0				
Preforms							2	4.0	2	1.0							1	2.0				
Ground slate items											1	1.0	2	1.0					1	1.0		
Drills													2	1.0					2	3.0		
Linear flakes							1	2.0					1	1.0								
Abraders											6	5.0	1	1.0								
Pebble knives			2	5.0							1	1.0										
Manos			1	2.0							1	1.0										
Paintstones			1	2.0							2	2.0										
Abrader-hammer					1	2.0																
Flaked-ground item					1	2.0																
Spoke-shave																			1	1.0		
Anvil stone																			1	1.0		
Ground celts													5	3.0								
Ground slate points													3	2.0								
Ground slate knives													1	1.0								
Backed flake knives											2	2.0										
Flaked adze											1	1.0										
Metate																					1	7.0
Biface celt											1	1.0					1	2.0				
Copper fish-hook											1	1.0										
Copper barbs											3	3.0										
Copper gaff											1	1.0										
Total	33	100.0	43	99.0	52	101.0	46	99.0	144	101.0	112	102.0	174	102.0	36	101.0	51	100.0	73	99.0	14	99.0

Minimal retouch, whereby substantial portions are retained of one or both faces of the original flake from which the point was made, occurred only as a minor attribute at two sites.

Bevelled blades, although represented by only six specimens, did occur at five sites which spanned the proposed chronology.

The single instance of a projectile point being subjected to burin blows was recorded from the Beach site (Plate II, fig. 16).

Lanceolate projectile points

The lanceolate projectile points, as the name indicates, are lanceolate in form and generally possess a straight or convex base. On complete specimens the length always exceeds 55 mm, and by estimation this also applies to the base fragments. The lanceolate projectile point has been used as one of the criteria for establishing the tentative Shield Archaic chronology. As will be discussed in the section treating the relationship of the Shield Archaic to the Plano tradition (p. 69), the lanceolate projectile point forms of the Shield Archaic appear to represent a development out of the lanceolate forms of the Plano tradition. If such is the case, the early Shield Archaic sites should produce predominantly lanceolate projectile points.

In terms of metrical attributes, both length and weight appear to increase through time, while width shows a slight, and late, decrease. Thickness remains relatively constant.

In terms of the three provincial and the one district site clusters, the decrease in frequency of lanceolate points is deviated from only in the case of the Ontario sites, where there is a decrease followed by an increase. Trends could not be noted with regard to the two Manitoba sites, as one produced only a single point and the other lacked points altogether.

Side-notched points

Although a wide range of varieties are lumped under the term side-notched, the Shield Archaic specimens, for the most part, appear to represent lanceolate forms to which clearly defined side notches have been added. This suggestion is supported by Table 13 which indicates that, as the lanceolate forms decrease, the side-notched forms increase. Indeed, in terms of the projectile points this decrease in the frequency of lanceolate points and a corresponding increase in side-notched points appear to be the most significant trends.

Metrical attributes indicate a general increase in length, shoulder width, and weight through time. Thickness remains relatively constant. The increasing lengths and weights reinforce the trends noted for the lanceolate points.

In terms of the two provincial* and one district site clusters, the increase in frequency of side-notched points is only slightly deviated from by the Ontario sites, where an increase is followed by a slight decrease.

Trianguloid points

As the name suggests, the trianguloid points tend to be more triangular in outline than lanceolate. They are shorter than the lanceolate points, never exceeding a length of 55 mm. With the exception of the somewhat arbitrary 55-mm minimum–maximum division between the lanceolate and trianguloid projectile points, there does exist a transitional area where it is difficult to separate the two varieties, particularly with reference to base fragments. However, the problem cases, endemic to projectile point classification, represent a minor number of instances. It is very probable that the trianguloid form is a development out of the lanceolate form, and therefore the problem of intergrades between the two varieties is only to be expected.

Although the significant metrical data in terms of trends are limited to the Ontario sites, indications are that lengths and weights increase, and widths and thicknesses remain constant. It is noted that the increase in length and weight through time is a trend that also occurs with reference to the lanceolate and side-notched points.

In terms of province and district site clusters, trianguloid points are absent from the Keewatin and Manitoba sites and occur on only one of the Quebec sites. All three Ontario sites produced trianguloid points, and their frequencies on these sites indicate an increase through time.

*The Manitoba cluster produced only one lanceolate point.

Table 13
Frequency of projectile point varieties

Variety	Blackfly Cove f (%)	Gods Lake f (%)	Bancroft f (%)	Aberdeen f (%)	Beach f (%)	Eaka f (%)	Fretz f (%)	Pinder's Paradise f (%)	Dot Island f (%)	Drunken Point f (%)
Lanceolate	1 (100.0)	1 (100.0)	4 (100.0)	4 (57.0)	9 (36.0)	3 (27.0)	8 (14.0)	1 (25.0)	2 (18.0)	4 (29.0)
Side-notched				2 (29.0)	7 (28.0)	2 (18.0)	28 (48.0)	3 (75.0)	6 (55.0)	6 (43.0)
Trianguloid					5 (20.0)	1 (9.0)	11 (19.0)			3 (21.0)
Stemmed				1 (14.0)	4 (16.0)	3 (27.0)	2 (3.0)		1 (9.0)	1 (7.0)
Bipointed						1 (9.0)	6 (10.0)		2 (18.0)	
Corner-notched						1 (9.0)	1 (2.0)			
Single-notched							2 (3.0)			
Total	1 (100.0)	1 (100.0)	4 (100.0)	7 (100.0)	25 (100.0)	11 (99.0)	58 (99.0)	4 (100.0)	11 (100.0)	14 (100.0)

Stemmed points

The stemmed projectile points exhibit a wide range of variation, with straight, expanding, and contracting stems all represented. In general, although absent from the first three sites in the proposed chronology, the stemmed points decrease through time. Their total frequency, however, is so low (12 specimens) that not too much weight can be given to this observation. Similarly, the metrical data that suggest an increase in most dimensions through time are of limited value due to the sample size.

Only in the Keewatin and Ontario site clusters did two or more sites possess stemmed points. In Keewatin there was an absence of specimens followed by a sharp increase, followed by a decrease. In Ontario an initial substantial representation is followed by a sharp decrease and then a slight increase.

Bipointed, corner-notched, and single-notched points

These three varieties are of such low frequency (9, 2, and 2, respectively) that little can be said other than to note that, with the exception of two bipointed projectile points at the Dot Island site, all the remaining specimens were recovered from the Eaka and Fretz sites in Ontario.

Scrapers

Scrapers are generally the most common single artifact class found on Shield Archaic sites. For the eleven sites under consideration, scraper frequencies ranged from 30 per cent to 56 per cent with an average occurrence of 41.6 per cent. On only two of the eleven sites, Blackfly Cove and Fretz, did another artifact class occur in greater frequency. In view of the relatively adequate samples of scrapers, the trends noted within this class of artifacts were a major factor in establishing the proposed chronology. As will be seen, these trends are both temporal and spatial, although the temporal developments are most clearly reflected in the respective regional developments. In this regard the scraper class appears to possess a more regional character than do the projectile points.

Scrapers were first divided into large and small categories using a 10-gm dividing factor. Such a device was regarded as necessary in view of the extensive size range of scrapers in the Shield Archaic. Without this division the metrical data would have been relatively useless, and it became evident that scraper size possesses temporal and spatial significance. The large and small scraper categories were then each subdivided into a number of varieties, and attributes of form and measurement were recorded for each variety.

There appears to be a significant spatial factor involved in the frequencies of the large scrapers. All the Keewatin and Manitoba sites possess 40 per cent or more large scrapers. Conversely, all the Ontario and Quebec sites, with the exception of the

Table 14
Frequency of large and small scrapers

	Large scrapers		Small scrapers		Totals	
Site	f	%	f	%	f	%
Blackfly Cove	5	50.0	5	50.0	10	100.0
Gods Lake	13	61.9	8	38.1	21	100.0
Bancroft	6	24.0	19	76.0	25	100.0
Aberdeen	12	66.7	6	33.3	18	100.0
Beach	21	33.9	41	66.1	62	100.0
Eaka	15	36.6	26	63.4	41	100.0
Fretz	28	53.8	24	46.2	52	100.0
Pinder's Paradise	3	15.0	17	85.0	20	100.0
Dot Island	10	50.0	10	50.0	20	100.0
Drunken Point	12	31.6	26	68.4	38	100.0
Elk Island	2	40.0	3	60.0	5	100.0
Total	127		185		312	

Table 15
Frequencies of large and small scraper varieties

Variety	Blackfly Cove f (%)	Gods Lake f (%)	Bancroft f (%)	Aberdeen f (%)	Beach f (%)	Eaka f (%)	Fretz f (%)	Pinder's Paradise f (%)	Dot Island f (%)	Drunken Point f (%)	Elk Island f (%)
Large											
End	1 (10.0)	1 (5.0)	1 (4.0)	6 (33.0)	12 (19.0)		13 (25.0)	2 (10.0)	5 (25.0)	1 (3.0)	
Random	2 (20.0)	12 (60.0)	5 (20.0)		6 (10.0)	12 (29.0)	4 (8.0)	1 (5.0)	4 (20.0)		2 (40.0)
Side	2 (20.0)			6 (33.0)			10 (19.0)			11 (29.0)	
Small											
End		4 (20.0)	4 (16.0)	6 (33.0)	39 (63.0)	7 (17.0)	13 (25.0)	12 (60.0)	6 (30.0)	19 (50.0)	
Random	5 (50.0)	1 (5.0)	15 (60.0)			15 (37.0)	6 (12.0)		3 (15.0)		3 (60.0)
Side					1 (2.0)	3 (7.0)	3 (6.0)	5 (25.0)	2 (10.0)	6 (16.0)	
Miscellaneous*		2 (10.0)			4 (6.0)	4 (10.0)	3 (6.0)			1 (3.0)	
Total	10 (100.0)	20 (100.0)	25 (100.0)	18 (99.0)	62 (100.0)	41 (100.0)	52 (101.0)	20 (100.0)	20 (100.0)	38 (101.0)	5 (100.0)

*These 14 scrapers are minor varieties of both large and small scrapers; their occurrence was generally restricted to single sites.

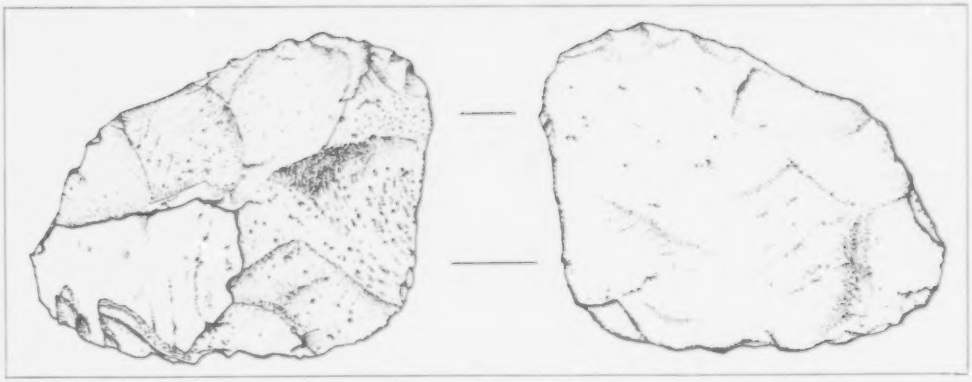


Figure 4
Uniface blade—dorsal (left) and ventral views

Fretz site, possess fewer than 40 per cent large scrapers. In terms of temporal trends, the frequencies of large scrapers increase and then decrease within each of the Keewatin, Ontario, and Quebec site clusters. The two Manitoba sites indicate a decrease in frequency. Of course, the reverse holds for the small scrapers.

Overall trends within the large and small scraper varieties are certainly not apparent from Table 15. As mentioned earlier, however, the scrapers appear to express a more regional character than was the case with the projectile points. Within the provincial and district site clusters some re-occurring trends are apparent.

Large end scrapers increase and then decrease in both the Keewatin and Quebec sequences, and decrease in the Manitoba and Ontario sequences.

Large random scrapers decrease in the Manitoba, Ontario, and Quebec sequences, but decrease–increase in the Keewatin sequences.

Large side scrapers are particularly erratic, showing an increase and disappearance in the Keewatin sequence, a total absence from both the Manitoba and Quebec sequences, and an increase within the Ontario sequence.

Small end scrapers exhibit a general increase within the Keewatin, Ontario, and Quebec sequences, but a decrease within the Manitoba sequence. The Manitoba sequence, however, is the weakest of the four site clusters inasmuch as it consists of two sites, the latest of which produced only 14 artifacts.

Small side scrapers increase within all the sequences except the Manitoba sequence, where they are absent.

Finally, small random scrapers generally decrease within all the sequences, again with the exception of the Manitoba sequence, where they increase.

In terms of form and metrical attributes only the most common scraper variety, the small end scraper, is considered here. Pertinent attribute information on the other scraper varieties can be drawn from the descriptive chapter. The frequencies of the number of scraping faces on the small end scrapers (end only, end and one side, end and two sides) are quite erratic, and it would appear that these attributes lack significant time–space meaning. Graver spurs, generally occurring at a corner where a side and the end scraping face meet, appear as a minority trait at two of the Keewatin sites, one of the Manitoba sites, and two of the Ontario sites. Ventral retouch only occurred on specimens from Ontario and Quebec sites, as was also the case with oblique end scraping faces. The two instances of spoke-shave concavities in small end scrapers both appeared at the Pinder's Paradise site in Quebec.

The metrical attributes exhibit more general trends than were apparent with the form attributes. In general, the length, scraping face width, and weight decrease through time, while the height of the end scraping face remains relatively constant.

Biface Blades

As was noted earlier, the general trend of the biface blades is to decrease in frequency through time (Table 12). It appears from the evidence of scraping faces and use-wear on many of the specimens that the biface blade frequently functioned as a generalized cutting–scraping tool. Information on use-wear was limited to two of the Keewatin sites, both of the Manitoba sites, and two of the Ontario sites because of water-tumbling or sand-blasting of the remaining five sites. Both the form attributes and metrical attributes of the biface blades appear to lack any time–space significance. Indeed, the variations, particularly in terms of the metrical attributes, are extremely erratic both at a general level and at a provincial or district sequence level, and may suggest that the form and metrical attributes were not particularly significant in the mind of the manufacturer.

Uniface Blades (Figure 4)

The uniface blades are one of the relatively few qualitative markers of the Shield Archaic. Unfortunately, the uniface blades, along with most other artifact classes in the Shield Archaic, suffer from the endemic problem of low samples. As a direct result of sample limitations, it is not possible to suggest any temporal or spatial trends for the uniface blades. It is important to note, however, that despite a very small sample (18 specimens), uniface blades occur on all the sites except the Dot Island site. This distribution of a distinctive artifact class that apparently possesses a substantial time depth adds to

Figure 5
Wedges of *pièces esquillées*

the body of data that unites the Shield Archaic as a concept and differentiates it from adjacent and contemporaneous traditions or assemblages.

Wedges (Figure 5)

The occurrence of wedges or *pièces esquillées* in the Shield Archaic is both limited and erratic. Specimens are represented, however, in all four provincial and district site sequences. The overall dimensions of Shield Archaic wedges are considerably greater than the dimensions of the much more numerous wedges recovered from Late Woodland period sites in the same general area.

Miscellaneous

The remainder of the artifact classes listed on Table 12 are represented by fewer than ten specimens except for the hammerstones. Despite the limited representation of these artifact classes, certain spatial observations are possible.

Flake knives (Figure 6), consisting of flakes that have had an edge bifacially retouched to produce a simple knife, occur in all the regional site sequences except the Keewatin sequence. Their absence from the latest sites suggests that a temporal factor may exist, although the sample is inadequate to demonstrate such a trend.

Core-scrapers occur as a minority tool in all the regional sequences. Preforms are scarce, but this is not accidental: an effort was made to avoid sites involved in quarrying activities, since artifact class and frequency comparisons are severely dislocated by such sites.

Miscellaneous ground slate items and drills are not only extremely rare, but are limited to the Ontario sequence.

Linear flakes are restricted to single specimens from one Keewatin site and one Ontario site. Neither the frequency nor the distribution supports the contention that the Shield Archaic possessed a core-blade technology. In short, the two specimens are regarded as fortuitous products.

Abraders are limited to two of the Ontario sites.

Pebble knives, the same as flake knives except that the bifacial edge is produced on a pebble, occur at two sites—one in Manitoba and the other in Ontario. Also restricted to these same two sites (Gods Lake and Eaka) are the two manos and three paintstones recorded for the sites under consideration.

Biface celts, consisting of a biface blade with a bit edge ground at one end, were present on both the Eaka and Dot Island sites.

The remaining artifact classes were restricted to single sites. All the ground celts, slate points, and knives came from the Fretz site, and all the copper implements came from the Eaka site. Both these occurrences appear to be a product of the geographical locations of the sites involved.

Summary

Subject to the very real limitations of some of the site samples there appear to be a number of significant temporal trends taking place within the proposed chronology of eleven Shield Archaic sites.

All the sites are dominated by three artifact classes—projectile points, scrapers, and biface blades. Indeed, the percentage frequencies of these three artifact classes range from 57 per cent to 94 per cent, with an average of 83.8 per cent. The general temporal trends are an increase in the projectile point and scraper frequencies and a decrease in biface blade frequencies.

Projectile point trends are represented by a decrease in lanceolate points and a corresponding increase in side-notched points. Of lesser importance and conviction are the decrease in stemmed points and the increase in bipointed points.

The scraper varieties appear to reflect a more regional character than is the case with the projectile points. This regional character, however, does not completely submerge the broader temporal trends. Large end scrapers, for example, increase–decrease or simply decrease within all four regional sequences, while small end scrapers generally increase through time. Other scraper varieties also exhibit apparently significant trends, although inconsistencies do occur.

No particular trends were noted with regard to the biface blades other than their general frequency decrease through time. Similarly, no particular trends were apparent in the distribution and frequency of the uniface blades.

Most of the remaining artifact classes were so poorly represented that temporal

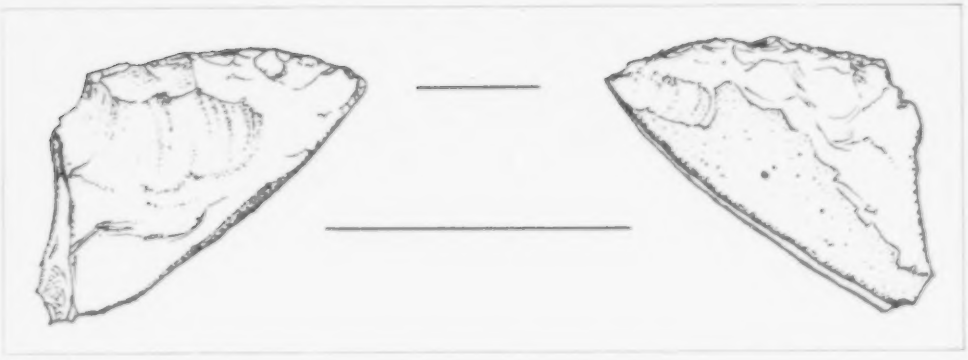


Figure 6
Flake knife

trends were impossible to detect. Certain spatial information, however, is suggested by these data.

An important negative trait is the paucity or absence of purposeful stone grinding to shape artifacts. Of the 778 stone items involved in the analysis of these eleven sites, only 16 specimens had been in any fashion shaped by grinding. This represents approximately 2 per cent of the collection, and a portion of this percentage clearly relates to the Laurentian Archaic.

Other Sites Relating to the Shield Archaic

There are a number of published and unpublished reports of sites and materials that in my opinion relate to the Shield Archaic tradition. These sites range from the eastern half of the District of Mackenzie in the Northwest Territories to the Labrador–Newfoundland area. The nature of these data ranges from detailed reports to casual, nondescriptive observations. Also, throughout this substantial portion of Canada, ongoing research is very much involved with the problem of the Shield Archaic and/or related materials. With reference to the published reports, factors such as sample size, component mixture, and differing qualitative and quantitative criteria make it, with few exceptions, difficult to compare effectively these data with the preceding eleven Shield Archaic sites. Despite such limitations an attempt is made to organize the information into some sort of semi-cohesive statement. However, this exercise is carried out with the full awareness of the inherent hazards involved in manhandling and reinterpreting other researchers' data as seen through the empirically and regionally tinted glasses of the writer. As was stated in an earlier paper (Wright 1968: 55), "Liberties taken with published reports are motivated solely by a desire to present a coherent picture in the light of new data." For organizational convenience as well as hypothetical bias this exercise will start with the Northwest Territories and advance eastward to Labrador–Newfoundland.

Northwest Territories

Of the regions to be considered in this section the Northwest Territories is by far the best documented. This situation is predominantly the result of Harp's extensive and competent research (Harp 1958, 1959*a*, 1959*b*, 1961, 1962). W. N. Irving's research in southern Keewatin District (Irving 1968; Bryson, Irving, and Larsen 1965) also represents a valuable contribution. Indeed, without the prior work of these two archaeologists the present study would not only be more limited in scope but would also lack an origin hypothesis for the Shield Archaic. Some of R. S. MacNeish's work in eastern Mackenzie District of the Northwest Territories (Mac-

Table 16
Frequency of artifact classes for five Shield Archaic sites and two other sites in the Northwest Territories

Artifact class	Blackfly Cove f (%)	AL-5 f (%)	BvL-4 f (%)	Aberdeen f (%)	Dot Island f (%)	Dismal 1a f (%)	Lockhart (site 22) f (%)
Projectile points	2 (6.1)	1 (3.7)	5 (20.0)	10 (21.7)	16 (31.4)	5 (17.2)	6 (23.1)
Scrapers	10 (30.3)	8 (29.6)	9 (36.0)	18 (39.1)	20 (39.2)	14 (48.3)	7 (26.9)
Biface blades	19 (57.6)	14 (51.9)	9 (36.0)	13 (28.3)	12 (23.5)	5 (17.2)	12 (46.2)
Uniface blades	1 (3.0)	1 (3.7)		1 (2.2)		1 (3.4)	
Flake knives		1 (3.7)				2 (6.9)	1 (3.8)
Wedge				1 (2.2)			
Preforms		1 (3.7)		2 (4.3)	1 (2.0)		
Core-scrapers	1 (3.0)	1 (3.7)			1 (2.0)		
Linear flake				1 (2.2)			
Biface celt					1 (2.0)		
Hammerstones			2 (8.0)			1 (3.4)	
Tci-tho						1 (3.4)	
Total	33 (100.0)	27 (100.0)	25 (100.0)	46 (100.0)	51 (100.1)	29 (99.8)	26 (100.0)

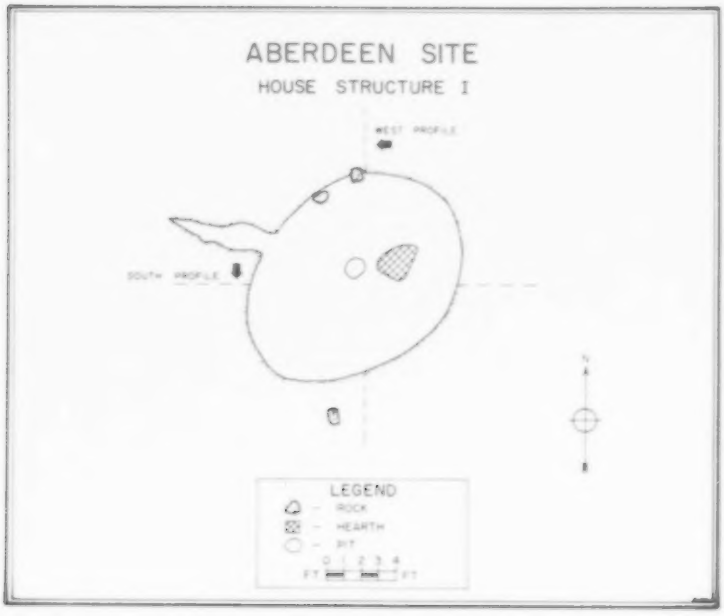
Neish 1951) is also of some pertinence to the present study. Of future importance will be the as yet unpublished results of W. C. Noble's 1966–69 survey and excavation in central Mackenzie District. Although the writer's 1969 excavation of the Aberdeen site (AL-7) will form a separate report, certain general information resulting from this excavation will be incorporated in the present study. In addition to the quality of past work that has been carried out in Keewatin District the writer has had the substantial advantage of re-examining all the materials in question, since they form part of the National Museum of Man collections. The single exception to this are the collections of W. C. Noble that are currently being analyzed by him. I have, however, had a number of opportunities to examine these materials and to discuss their import with Noble.

In addition to the three sites that are included in the analysis (Aberdeen, Blackfly Cove, and Dot Island) there are four other sites in the Northwest Territories with samples of 25 or more specimens which (with two exceptions) are assigned to the Shield Archaic. These are as follows: AL-5 and BvL-4 (Harp 1961); Dismal 1a (Harp 1958) and Site 22 of the Lockhart complex (MacNeish 1951). It is the last two sites that are not included in the Shield Archaic. Table 16 presents the artifact class frequencies for the seven Northwest Territories sites.

Discrepancies between Table 16 and the reports of Harp and MacNeish are the product of my use of different terms and, at times, different criteria for assigning specimens to a certain class. There is good consistency within the five Keewatin District sites (Blackfly Cove, AL-5, BvL-4, Aberdeen, and Dot Island) with reference to the general artifact class trends seen within the Shield Archaic tradition as a whole. For example, projectile point and scraper frequencies increase, while biface blade frequencies decrease. The remaining artifact classes for the Keewatin sites not only have a very limited representation but are also randomly distributed. The single projectile point from AL-5 is a straight-stemmed variety with strong lateral grinding (Harp 1961: Plate 6, fig. g), whereas the five projectile points from BvL-4 consist of three lanceolates, one straight-stemmed, and a mid-section of a projectile point (Harp 1961: Plate 9, figs. b–e). Contrary to Harp, fig. e is regarded as a lanceolate projectile point fragment that has been subsequently used as a wedge. Only the latter specimen and the stemmed point exhibit strong lateral grinding. As can be seen by examining Table 13, the projectile point varieties from BvL-4 support the site's relatively early position in the Keewatin sequence. Within the same sequence large scrapers show an increase–decrease through time, with AL-5 and BvL-4 possessing 75 per cent and 67 per cent respectively of scrapers in excess of 10 gm. Both this trend and the high frequency of large end scrapers support the temporal and spatial tendencies of large scrapers in general from the Shield Archaic.

Whereas the five Keewatin sites exhibit relatively good continuity through time and also reflect the general trends seen through the Shield Archaic as a whole, the two Mackenzie District sites (Dismal 1a and site 22 of the Lockhart complex) introduce some severe discontinuities to the overall picture. The Dismal 1a site (Harp 1958), for example, with its lanceolate projectile points and single stemmed point (Plate XXII, figs. 1–4), should, hypothetically, represent an early expression of the Shield Archaic. The low frequency of biface blades and high frequency of scrapers, however, would suggest on the basis of the observed artifact class trends that the site is late. The dominance of the large scraper is still retained with a frequency of 57 per cent. Conversely, site 22 of the Lockhart complex should, on the basis of its side-notched projectile points (Plate XXIII, figs. 2–5), fall later in the Shield Archaic tradition. In this instance, however, the high frequency of biface blades runs contrary to the proposal that biface blade frequencies decrease through time. Large scrapers still are dominant with a frequency of 71 per cent.

Of the two sites, Dismal 1a appears to relate more closely to the Shield Archaic than site 22 of the Lockhart complex. Site 22, on the other hand, not only deviates from the hypothesized relationship of artifact class frequencies to projectile point varieties, but also differs with reference to a number of specific projectile point attributes, including form. As will be discussed in the section dealing with the Plano tradition in the Northwest Territories (p. 69), there are certain significant differences between the Keewatin District sites and the eastern Mackenzie



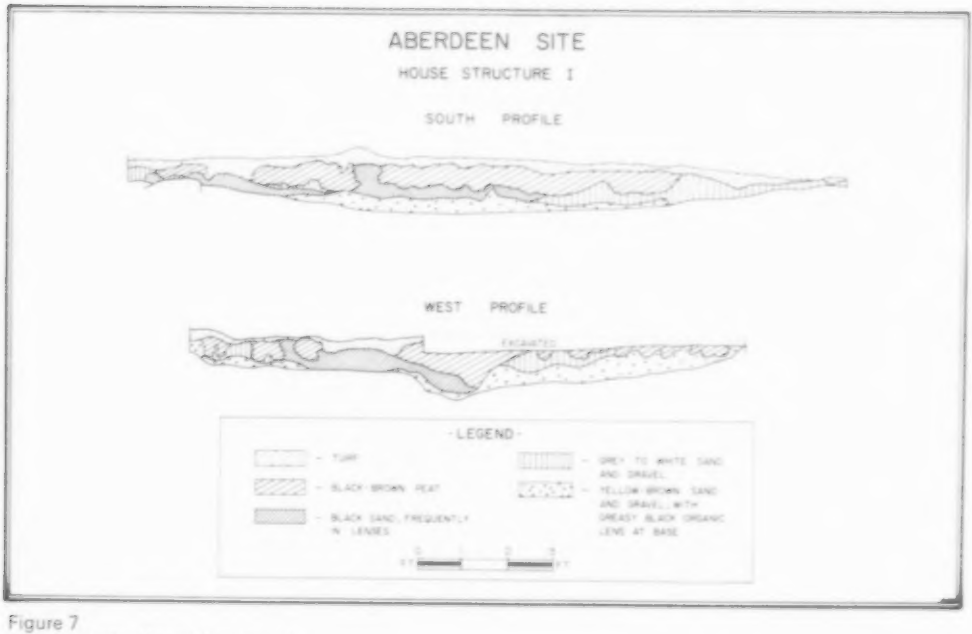


Figure 7
Aberdeen site, House Structure I

District sites at an early time level. This locally distinctive character of the Plano tradition in the Northwest Territories appears to have carried through to subsequent complexes. Whatever the case, a clear understanding of the relationships or the lack of relationships between the two sequences is certainly a matter of the future.

During the 1969 field season I excavated 2,000 square feet of the Aberdeen site (AL-7), recovered 847 specimens and exposed two house structures. These data will be presented in a separate report, but for the purposes of the present study a general description of one of the house structures in particular is desirable. House structure I of the Aberdeen site (Figure 7; Plate I, fig. 1; and Plate XXIV) is an ovate, semi-subterranean structure measuring approximately 10 by 14 ft and possessing the following features: an entrance way 6 ft in length, a central pit, a hearth, several surviving tent-weighting stones, what is interpreted as a sleeping-platform, and a definite concentration of artifacts and debris within the eastern confines of the house. This structure has been dated at 1075 B.C. ±90 (S-506). Table 17 presents the artifact class frequencies of the artifacts found within the confines of the house.

Table 17
Frequency of artifact classes for House Structure I, Aberdeen site

Artifact class	f	%
Projectile points	17	18.3
Scrapers	36	38.7
Biface blades	33	35.5
Flake knives	3	3.2
Abraders	2	2.2
Preforms	2	2.2
Total	93	100.1

The artifact class frequencies from House Structure I are close to the artifact class frequencies based upon Harp's surface collection of 46 specimens (Table 12). Projectile point varieties are represented by 53 per cent side-notched, 12 per cent lanceolate, 12 per cent single-notched, and 24 per cent unanalyzable fragments. The dominance of the side-notched variety suggests that the house related to the later portion of the Shield Archaic tradition: an observation that is also supported by the late radiocarbon date. This late position is also reinforced by the general artifact class trends noted for the Keewatin District sites.

Manitoba

An abundance of information pertinent to the Shield Archaic in Manitoba is anticipated in the very near future. Research, however, is ongoing and the results are not yet available. Two stratified and two single-component sites in the Lake Athapapuskow region near Flin Flon hold particular promise. These are the Mink Narrows, Tincan Narrows, (Hlady, n.d.), Bakers Narrows, and Evans sites (Simpson 1966), which, with reference to the archaic components, have been called the Athapap phase or culture (Simpson 1966; Hlady 1967).

In 1968 and 1969 I had the opportunity to examine casually some of the material from both the Bakers Narrows and Evans sites. The impression I received at the time was that the collections did relate to the Shield Archaic, but that the proximity of both sites to raw material introduced the quarrying factor with its high frequencies of biface blades, preforms, and core-flake detritus. As was pointed out earlier, quarry sites have not been used for comparisons in this report because their specialized function introduces a factor that is disruptive to a scheme attempting to outline the temporal and spatial variations as expressed by habitation sites. This is not to say that the quarry sites do not contribute information vital to our understanding of the Shield Archaic, but simply that for the purpose of the current study such sites have been purposefully separated from the habitation sites in order to maintain comparative continuity.

Farther to the north, between 58° and 60° latitude, Ronald J. Nash (Nash 1963) has reported the occurrence of a limited number of projectile point varieties, including a Keewatin lanceolate specimen and side-notched and stemmed projectile points very similar to specimens from the lower and central Keewatin District (Harp 1961; Irving 1968). With reference to the Rock Lake site north of Thompson, Manitoba, Nash (1969: 139–40) has suggested that the specimens "reflect some diffusion to the interior from sites like Thyazzi." The mixed specimens from

the Rock Lake site represent more than one component but the "earlier-looking material" consists of corner-notched, trianguloid, and stemmed projectile points, biface blades, side blades, scrapers, and possible drills. If these materials are related to the Shield Archaic, the projectile points, particularly the corner-notched specimens, would suggest a late placement which would be in relative accord with the age estimate of 1500 B.C. for the Thyazzi site.

Ontario

Most of the published data from northern Ontario that are pertinent to the Shield Archaic have been produced by Mr. Frank Ridley (Ridley 1954, 1956, 1957, 1958, 1962, 1966). Of paramount importance are the Frank Bay site on Lake Nipissing and the Lake Abitibi sites.*

With some qualifications I am in essential agreement with most of Ridley's general interpretations of these data. For example:

> I do suspect that when Greenman discovered George Lake I and Lee, with Bell, found the Sheguiandah and Giant sites, they uncovered the southern fringe of a great archaic stone industry that once formed the basic pattern for much of the now boreal zone of North America *(Ridley 1966: 19)*;

and referring to Harp's Keewatin material:

> Not speculative is our correlation showing that in typology and technique the archaic-like material cultures of the barren lands west of Hudson Bay is of one zone with the boreal area south of Hudson Bay. *(Ridley 1966: 21)*

In his chronological ordering of sites, Ridley places the Abitibi Narrows site early and the Mattawan component of the Frank Bay site late, with the Ghost River site being intermediate (Ridley 1966: Fig. 27, p. 47). I am in full accord with this chronological sequence. Both the side-notched and trianguloid projectile points and the small end scrapers (Ridley 1958: Figs. 2 and 3) from the Frank Bay site, would suggest a late position in the sequence. The important point, however, is that both Ridley and I see evidence for cultural continuity between such apparently different sites as Abitibi Narrows and Frank Bay. For example:

> I suggest that the implement assemblage of the Ghost River site, illustrated in an earlier report (Ridley, 1958a), lies between Mattawan and the Levallois industry of the Narrows site. *(Ridley 1966: 46)*

It should also be mentioned that this concurrence has arisen from the use of largely different bodies of data and from different techniques of analysis.

The major point of contention between Ridley and myself involves the presence or absence of a prepared core-blade industry in the late Shield Archaic or Mattawan assemblage. Ridley sees the "micro-blades, lamellar flakes, and prepared polyhedral cores" (Ridley 1966: 44) attributed to the Mattawan stratum of the Frank Bay site as evidence of relationships with "early industries of the Arctic coast" (Ridley 1966: 2), and further states:

> Conclusions and speculations on the meaning of the sites of Abitibi are complicated by the circumstance that the geographical location evidently falls across once-accepted Indian and Eskimo spheres of influence. When Europeans penetrated the area in the 17th Century, before the Iroquois eruption, it was occupied by Amerinds of the Algonquin group. Now, however, the discovery of the Mattawan small-tool complex and the exclusion of Laurentian artifacts at the Frank Bay site on Lake Nipissing little more than a decade ago, together with the occurrence of many Eskimo-Arctic artifacts, at Lake Timiskaming, has presented us with the possibility of a very different prehistoric occupation of northern Ontario (Ridley 1954 and 1957*b*). *(Ridley 1966: 42)*

Others (Taylor 1959: 10–11; Byers 1959*b*: 253) have suggested a possible relationship between the Mattawan assemblage and the Northwest Microblade tradition (MacNeish 1959).

In an earlier paper (Wright 1968: 60), I expressed serious doubts concerning both Arctic Small Tool relationships and the existence at all of a core-blade technology in the Shield Archaic, including the Mattawan assemblage as a late expression of the tradition. Since that time, both the vastly increased body of data and the opportunity for detailed discussions with researchers directly involved with prepared core-blade industries have substantially reinforced my earlier opinion. The specimens illustrated in Ridley's various reports as evidence for a prepared core-blade technology are both

*Mr. Ridley most kindly allowed me to examine the materials from the Abitibi Narrows, Ghost River, and Frank Bay sites. Comments and tabular data with reference to these sites are drawn directly from this examination.

qualitatively unacceptable and quantitatively limited, and my personal examination of the specimens in question in February 1970 has, from my standpoint, confirmed the preceding statement. In my opinion these items are natural products of the chipping technology that fortuitously bears a very general resemblance to northern core-blades. Their erratic form attributes and limited frequencies both suggest accident rather than intent.

In a symposium held at Ottawa, in November 1969, on "Prepared Core and Blade Industries in Northern North America," David Sanger presented a paper outlining certain necessary criteria for qualification as a prepared core-blade industry. It was suggested that any collection of blades possessing less than one-third trapezoidal sections be referred to as linear flakes in order to differentiate between intentional blade production and blade-like flakes resulting from other core varieties. From the comparison of blades from sites involved in a prepared core-blade technology, it was found that approximately 50 per cent of the blades possessed a single medial ridge resulting in a triangular section, and therefore the one-third trapezoidal section prerequisite is very conservative. What is being suggested is that, in striking blades from a core prepared specifically for that purpose, it becomes next to impossible not to produce a high frequency of blades with multiple dorsal ridges (trapezoidal sections) because of the fluted surface of the microblade core (Sanger 1968: Fig. 2). In something as technically advanced as core preparation for the production of blades it is not likely that the presence of this specialized technology will be represented at a site by half a dozen blades or less. With few exceptions the blades illustrated by Ridley possess a single medial ridge and a triangular section, and in every instance they represent a very minor element within the total assemblage. Indeed, many of these blades owe their blade-like appearance to subsequent lateral retouch (Ridley 1954: Figs. z–cc). The presence of a prepared core-blade technology with all the ramifications such a presence suggests is therefore rejected.

In addition to the three Ontario Shield Archaic sites described in Chapter II (Eaka, Fretz, and Drunken Point), six other sites in Ontario can be used for comparative purposes. These are the Frank Bay, Abitibi Narrows, and Ghost River sites (Ridley 1954, 1966), the Boyes site (Dawson 1964), the Mattagami Post site, and the McCollum burial site (Griffin and Quimby 1961). For the purpose of general comparisons it was necessary to reinterpret to some degree the material recovered by Ridley. This was necessary because of differing criteria with reference to artifact classes as well as the previously discussed prepared core-blade controversy. For the Abitibi Narrows site only those artifacts from the "rear or high portion" of the site are considered. The major modification to the analysis of the Mattawan stratum at the Frank Bay site (Ridley 1954) is, of course, the rejection of the proposed microlithic assemblage consisting of core and lamellar flakes, "angle gravers," and "small retouched random flakes" (Ridley 1954: 43).

The Boyes site is located near the mouth of the Kashabowie River where it enters Shebandowan Lake, or approximately ten miles south of Lac des Mille Lacs in the southwestern area of northern Ontario. Professor K.C.A. Dawson reported on the site in 1964 while working under contract with the National Museum of Man. Both the material he collected, which now resides in the National Museum, and his detailed records of specimens recovered by area residents (Messrs B. Battley and J. Boyes) allowed a relatively accurate examination of the total artifacts from the site (Plate XXV, figs. 23–33). A single, late, side-notched arrowhead and a Laurel tradition body sherd were the only two specimens excluded from the analysis. (For a description of the copper projectile point *see* Dawson 1966.)

The Mattagami Post site analysis is drawn from my notes on material sent in for examination by Mr. J. D. Reed of Swastika, Ontario. The site is located at the head of the Southeast Arm of Mattagami Lake, less than two miles north of the Drunken Point site. Separate lots of material from the site were submitted for three sequential years starting in 1963, but fortunately a detailed record of the entire collection was kept and therefore the resulting data are relatively accurate. And, as was the case with the Boyes site, all the specimens were recovered from the surface.

The arrangement of sites on Table 18 reinforces the general proposal that biface blades decrease while scrapers increase. A

similar increase in the relative frequency of projectile points is not as readily apparent. Uniface blades are absent from the two latest sites and have their highest representation at what is regarded as the earliest of the Ontario sites. The data are still too limited, however, to demonstrate any meaningful temporal trend for the uniface blades. The frequency of projectile point varieties is given in Table 13 for the Eaka, Fretz, and Drunken Point sites. For the other sites the frequencies are as follows: Abitibi Narrows —trianguloid (1) and stemmed (1); Ghost River—side-notched (4) and trianguloid (2); Mattagami Post—side-notched (2), lanceolate (1), stemmed (1), and corner-notched (1); Boyes—trianguloid (5), side-notched (3), and corner-notched (1); and Frank Bay —trianguloid (5), stemmed (4), lanceolate (3), and side-notched (2). For the most part, the samples are too small even to be reduced meaningfully to percentages. The dominant position of the trianguloid projectile point variety at the two latest sites, however, may well be significant despite the earlier interpretation drawn from Table 13 where no significant trend for the trianguloid points was apparent.

As so often happens when work is being done on the prehistory of the eastern Boreal Forest, the Frank Bay site becomes a critical factor. The Mattawan stratum of the site has been radiocarbon dated at 970 B.C. ±300 (M-363) (Byers 1959*b*: 253) and is regarded in this report as a late component of the Shield Archaic. The only other dated late Shield Archaic site, with the exception of House Structure I at the Aberdeen site, is the Elk Island site in Manitoba, which unfortunately produced only 14 artifacts. Both dates from this site fall within the ninth century B.C. As a late Shield Archaic component, the Mattawan stratum of the Frank Bay site is vital to our understanding of the relationship between the Shield Archaic tradition and the following Laurel tradition. Certainly the side-notched points from the Frank Bay site (Ridley 1954: Fig. 16, d and i) would fall within the range of the Laurel side-notched points (Wright 1967), and some of the trianguloid points resemble the specimens that were classified as biface blades in the Laurel tradition report. The Mattawan component and the Laurel tradition sites also share linear flakes.

Most important in assessing relationships between the late Shield Archaic tradition as represented by the Mattawan stratum and the Laurel tradition, however, are the scrapers. To judge from the illustrations (Ridley 1954: Figs. 16 and 17) the vast majority of the Frank Bay site* scrapers are small, and, furthermore, both the illustrations and the frequent characterization of the retouch as being "fine" suggest that rip retouch is involved. These observations were confirmed by personal examination. Rip retouch refers to a technique of placing the edge of a thin flake against the face of a solid object and then pressing down in a single action, which produces fine, uniform retouch along the entire flake edge in contact with the anvil. Such retouch generally produces a scraping face 1 mm in height and can be distinguished from use-retouch by its uniformity. This technique is basic to the Laurel tradition knapping technology, and appears most frequently on the side scrapers and random scrapers. The technique also occurs on the side and random scrapers of the Boyes site, where all the scrapers are small (less then 10 gm).

While the size, form, and retouch technique of side and random scrapers from sites such as Frank Bay and Boyes suggest, in addition to other correspondences, continuities between these sites and Laurel tradition sites, further support is provided by an examination of the cache of scrapers from the McCollum site south of Lake Nipigon (Plate XXV, figs. 1–22). The McCollum site consisted of a very rich grave containing predominantly copper grave offerings and lacking bone preservation. Exposed in 1954 by a bulldozer, the site was examined and the collection recorded in 1957 by James B. Griffin and George I. Quimby (Griffin and Quimby 1961). In 1960 I made another analysis of the McCollum collection and carried out some limited test excavations in the vicinity of the original discovery. During these excavations I was fortunate to discover an undisturbed portion of the grave pit that contained one undisturbed cache of artifacts and another slightly disturbed cache.

The items recovered are as follows: 27 scrapers, 29 utilized flakes, 1 projectile point, 1 copper triangle, 1 copper rivet, 4 fragments

*Frank Bay as used in this report equates only with the Mattawan stratum of the site.

Table 18
Frequency of artifact classes for eight Shield Archaic sites in Ontario

	Abitibi Narrows		Eaka		Ghost River		Fretz		Mattagami Post		Drunken Point		Boyes		Frank Bay	
Artifact class	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Projectile points	2	5.0	14	13.0	7	15.0	64	37.0	5	12.0	18	25.0	10	16.0	13	16.0
Scrapers	14	37.0	41	37.0	22	47.0	52	30.0	17	40.0	36	49.0	40	65.0	53	66.0
Biface blades	11	29.0	18	16.0	11	23.0	36	21.0	5	12.0	11	15.0	4	6.0	7	9.0
Uniface blades	4	11.0	3	3.0			4	2.0	2	5.0	1	1.0				
Ground slate items			1	1.0			2	1.0	1	2.0	1	1.0			1	1.0
Spoke-shaves	1	3.0									1	1.0			1	1.0
Flake knives*			5	4.0	1	2.0	2	1.0	1	2.0			3	5.0		
Wedges			5	4.0					1	2.0	2	3.0				
Hammerstones			5	4.0			1	1.0	1	2.0						
Abraders			6	5.0			1	1.0	6	14.0						
Linear flakes					2	4.0	1	1.0					4	6.0	3	4.0
Ground slate projectile points	1	3.0					3	2.0								
Drills							2	1.0			2	3.0				
Ground celts							5	3.0	1	2.0						
Core-scrapers	1	3.0	4	4.0												
Mano			1	1.0												
Paintstones			2	2.0	1	2.0										
Flaked adzes	1	3.0	1	1.0												
Biface celt			1	1.0												
Anvil stone											1	1.0				
Preforms	3	8.0			3	6.0									1	1.0
Graver															1	1.0
Flaked-pecked-ground item									1	2.0						
Ground slate knife							1	1.0								
Gorget									1	2.0						
Copper fish-hook			1	1.0												
Copper barbs			3	3.0												
Copper gaff			1	1.0												
Copper projectile point													1	2.0		
Total	38	102.0	112	101.0	47	99.0	174	102.0	42	97.0	73	99.0	62	100.0	80	99.0

*Pebble knives and backed flake knives are included in the flake knife class.

probably representing 2 copper needles, 18 hammered copper nodules, and a small deposit of ochre. In addition, a biface blade was picked up at the water's edge. A total inventory for the site now is as follows: scrapers, 29 (35.8); copper discs, 13 (16.0); copper projectile points, 10 (12.3); miscellaneous single copper items, 5 (6.2); copper bracelets, 4 (4.9); copper triangles, 4 (4.9); copper beads 4 (4.9); copper needles, 3 (3.7); projectile points, 3 (3.7); biface blades, 2 (2.5); copper rods, 2 (2.5); copper knives, 2 (2.5), totalling 81 (99.9) specimens. The copper nodules, utilized flakes, and ochre deposit have been excluded from the foregoing list. Before proceeding to the scraper comparisons some additional comments on the McCollum site artifacts are necessary. While I agree, on the basis of both the copper and stone items, that the site is late in the Archaic, I do not accept the evidence for a prepared core-blade technology inferred from one of the scrapers (Griffin and Quimby 1961: 100 and Pl. XXII). The markedly concave–convex lateral section of the specimen in question appears to be in excess of what would be expected from a blade core. Scraper retouch on both sides has further altered the original flake form to the point where I would hesitate to classify the specimen as a linear flake. In addition to this scraper a number of the specimens were manufactured from the Knife River chalcedony of North Dakota. Also, one of the random scrapers consisted of a flake derived from a biface blade or core.

Table 19 presents the scraper seriation for three late Shield Archaic sites and three Laurel sites. Whereas the Laurel sites are arranged in the inferred chronological order, no such ordering is possible at this time for the Archaic sites. The scraper classification is drawn from the Laurel tradition report (Wright 1967).

The vast majority of the scrapers referred to on Table 19 weigh less than 10 gm and would, therefore, be classified as small scrapers. All the scrapers from the McCollum cache are small although the two scrapers illustrated on Plate XXII in Griffin and Quimby (1961) are almost certainly in excess of 10 gm. The number of large scrapers at the Frank Bay site consist of 17 end scrapers and 4 side scrapers. For the Laurel tradition sites only three large scrapers, all from the Heron Bay site, are represented.

While the dominance of small scrapers and the presence of rip retouch, plus certain general correspondences in projectile point varieties (trianguloid and side-notched) and artifact class trends, first suggested that some degree of continuity in the lithic assemblage existed between sites such as Frank Bay and Boyes and the following Laurel tradition sites, it was the McCollum scraper cache that indicated both specific and direct continuities. It is admitted that there can be hazards in comparing grave contents with habitation debris, but in this instance it is felt that the mundane nature of the grave goods under consideration justify the comparison. Assuming the validity of the McCollum scraper sample, it can be seen from Table 19 that there is excellent continuity between the McCollum scraper frequencies and the subsequent Laurel scraper frequencies. All the McCollum scrapers except the end scrapers are rip retouched, and taken as a unit they are, in my opinion, indistinguishable from Laurel tradition scrapers. The three side-notched and corner-notched projectile points exhibit close parallels in form and knapping technology to typical Laurel tradition points. When only flaked tools are considered the artifact class frequencies between such sites as McCollum and Heron Bay are also quite similar (Plates XXV and XXVI). Finally, the proposed continuity would provide a logical antecedent for the abundant and technically competent use of native copper in the Laurel tradition.

Although the scraper variety frequencies at the McCollum site provide an excellent anchor for the Laurel tradition scraper frequencies, this is not the case with the scrapers from both the Frank Bay and Boyes sites. At these two sites the dominant scraper variety is the simple end scraper although there is also a relatively high frequency of side scrapers. These frequencies are in contradiction to the progressive decrease of side scrapers and increase of end scrapers running from the McCollum site through the Laurel sequence. As was mentioned earlier (p. 44), "the scraper class appears to possess a more regional character than do the projectile points." Therefore the late preference for end scrapers at Frank Bay, and to a lesser extent at the Boyes site, may well express regional variations from the Lake Superior scraper variety trends. Indeed, the side-notched projectile points

Table 19
Scraper seriation for three Archaic and three Middle Woodland sites

Class	Subclass	Archaic						Middle Woodland					
		Frank Bay 53		Boyes 40		McCollum 29		Pays Plat 39		Heron Bay 598		Killala Lake 31	
		f	%	f	%	f	%	f	%	f	%	f	%
End scrapers	Simple	40	75.5	23	57.5	6	20.7	11	28.2	181	30.3	14	45.2
	Oblique									14	2.3	3	9.7
	Side-notched									1	0.2		
	Fragments									21	3.5	1	3.2
	Sub total	40	75.5	23	57.5	6	20.7	11	28.2	217	36.3	18	58.1
Side scrapers	Irregular retouch			1	2.5	4	13.8	10	25.6	93	15.6	1	3.2
	Continuous retouch	10	18.9	12	30.0	13	44.8	6	15.4	74	12.4	2	6.5
	Irregular and continuous retouch							2	5.1	16	2.7	1	3.2
	Triangular	2	3.8	2	5.0	2	6.9	1	2.6	15	2.5	1	3.2
	Concave									4	0.7		
	Side-notched concave									4	0.7		
	Crooked							1	2.6	2	0.3		
	Fragments					1	3.4	1	2.6	10	1.7		
	Sub total	12	22.7	15	37.5	20	68.9	21	53.9	218	36.6	5	16.1
Random flake scrapers		1	1.9	2	5.0	3	10.3	7	17.9	163	27.3	8	25.8
Total		53	100.1	40	100.0	29	99.9	39	100.0	598	100.2	31	100.0

and the "numerous" end scrapers of the Middle Woodland component overlaying the Mattawan stratum of the Frank Bay site reinforce the probability of both regional scraper variety trends and continuity between the Archaic and Middle Woodland occupations at the site. The dominance of small end scrapers at the Frank Bay site is supported not only by the scraper seriation for the Quebec sites (Table 15) but also by recently excavated data from the Montreal River site on the west side of Lake Timiskaming. This site, originally excavated by Frank Ridley (1957), was recently salvaged by the University of Toronto under contract with the National Museum of Man. Mr. Dean Knight, a graduate student at the Department of Anthropology of the University of Toronto, is currently analyzing material from the site. During my examination of the collection in December 1969, the predominance of side-notched, corner-notched, trianguloid projectile points and of small end scrapers, as well as the scarcity of biface blades, led me to classify the pre-ceramic occupation of the site as late Shield Archaic.

The data from Ontario have been particularly valuable in providing some insight into the late portion of the Shield Archaic tradition. What has emerged is that the late portion of the tradition differs markedly from the early portion; without the intermediary sites and the overall quantitative and qualitative trends it would be difficult to see that a single tradition is being dealt with. Spatial variations are to be expected in the late Shield Archaic, but the following general characteristics appear to be shared: a marked decrease in the frequency of biface blades, a marked increase in the frequency of small scraper varieties, the reduction of projectile point size, and the increasing frequency of side-notched and trianguloid projectile point varieties. In general there appears to be a gradual decrease in artifact size through time and, concomitant with this decrease, a shift away from massive silicious materials like quartzite to small nodular flints. It may be suggested that the reduction of tool size that allowed the exploitation of the small nodular flints is basically responsible for the apparent discontinuity between the early and late periods of the Shield Archaic tradition. Such tools as biface and uniface blades, core-scrapers, and even large scrapers could not, because of their size, be effectively produced from the nodular flints. The disappearance of the large cutting–scraping tools, however, was compensated for by a marked increase in small scrapers. These shifts in tool size and variety determined the character of the Laurel tradition lithic assemblage. In large part, the lithic assemblage of the Laurel tradition is an unbroken continuation of the Shield Archaic tradition. The ceramics and certain other traits such as netsinkers may have been grafted onto the earlier tradition. As such, the Laurel tradition is not the product of a population migration out of the northwest as was earlier hypothesized (Wright 1967: 132–33), but rather is the product of limited trait acquisitions, including pottery, by indigenous Shield Archaic populations.

In view of the preceding developments, it is necessary to re-evaluate the concept of the Old Copper Culture in Ontario. A substantial number of native copper items have been found in Ontario that have been assigned to the Old Copper Culture. (Popham and Emerson 1954; Griffin and Quimby 1961; Quimby and Griffin 1961; Wright 1963; Dawson 1966). The concept of an Old Copper Culture, however, is based upon cemetery excavations and surface collections from Wisconsin (Wittry and Ritzenthaler 1956). I am very sceptical of the existence of a discrete Archaic culture or complex that is characterized by the use of copper. Rather, I would see the exploitation of a local resource (copper) by several discrete Archaic populations that shared a copper-working technology but differed markedly in other aspects of their cultures. A similar view has been proposed by other researchers (E. Johnson 1964: 20–21; Griffin 1966: 282). Examples of distinct Archaic populations that shared a copper-working technology are as follows: the Archaic occupants of eastern and southern Wisconsin; the Shield Archaic populations in the Lake Superior region near the source of copper; and the Laurentian tradition populations of the Ottawa Valley (Kennedy 1967, n.d.). Whereas the copper-working technology may well have first developed in eastern Wisconsin, it appears to have spread quite rapidly to other adjacent Archaic populations. Under the circumstances, if the term Old Copper Culture is to be applied in a meaningful cultural sense, the term should perhaps be restricted to certain

Wisconsin Archaic assemblages that share a generally similar material culture, including the manufacture of native copper implements. The sites to the north and east sharing in the copper technology should then be identified as Shield Archaic or Laurentian on the basis of the stone technology and other traits.

Quebec

The bulk of the detailed published information pertinent to the Shield Archaic in Quebec comes from the Mistassini–Albanel region of central Quebec (F. Johnson 1948; Martijn and Morlan 1966; Martijn and Rogers 1969; Rogers and Rogers 1948, 1950; Rogers and Bradley 1953). Other reports are available for Lake Abitibi (T. E. Lee 1965), Kempt Lake (Burger 1953; Ritchie 1965: 80–82) and the north shore of the Gulf of St. Lawrence near the Labrador border (Harp 1963). The most comprehensive statement is without doubt the recent publication by C. A. Martijn and E. S. Rogers. Martijn presents the archaeological data in a detailed and effective manner and also provides the reader with a preliminary reconstruction of the late Pleistocene and post-glacial developments in central and southern Quebec. An extremely valuable addition to the archaeological data is Rogers's ethnohistorical account of the Mistassini Indians. Indeed, the ethnohistorical account throws considerable light upon certain aspects of the archaeology. The following major conclusions are drawn from the archeaological, ethnological and environmental data (Martijn and Rogers 1969: 345–48):

1. By 5000 B.C. the Mistassini area was deglaciated.
2. All known sites in the area are post-Pleistocene in age.
3. The first hunters probably entered the area between 4500 and 4000 B.C. from the west or south to seasonally exploit caribou in a taiga environment. Called the Temiscamie complex, these earliest hunters in central Quebec originated from a late Palaeo-Indian culture base.
4. With the development of a Boreal Forest environment the Wenopsk complex, a regional expression of the Shield Archaic tradition, occupied the area on a permanent basis. This occupation, extending from 4000 B.C. to A.D. 1000, is divided into four sequential phases and is characterized by "continuity through time," lacking any "abrupt transitions."
5. The Wenopsk complex is transformed by the introduction of European trade goods into the Mistassini of the historic period.
6. There is no evidence of Eskimo contact with, or antecedents from, the Wenopsk complex.

In addition to the three Quebec Shield Archaic sites described in Chapter II (Beach, Bancroft, and Pinder's Paradise), components from five other sites in Quebec can be used for comparative purposes. These are levels 2 and 3 of the Yadogami site, level 2 of the Haut Quai site, and level 2 area C of the Pointe de Camp site—all in the Mistassini–Albanel area (Martijn and Rogers 1969); and zone 2 of the Louis site near the embouchure of Rivière Duparquet into Lake Abitibi (T. E. Lee 1965).

Some reinterpretation of the data from these components was necessary in order to incorporate them into the system used in this report. Such modifications can be potentially hazardous, but in these instances the excellent quality of both the descriptions and the illustrations markedly reduces the dangers of misinterpretation. Modifications to Martijn's classification are as follows: axe is classified as preform, burinated implements are excluded, choppers and chopping tools are classified as core-scrapers, cores are excluded, denticulated implements are classified as miscellaneous, used flake tools are excluded, pointed large implements are classified as bifaces, quartz crystals are excluded, trihedral elongated objects are classified as preforms, ulu-like implements are classified as flake-knives, and blades are classified as linear flakes. The burinated implements are excluded, as Martijn himself appears to have certain reservations concerning their reality. He states:

> The possibility exists, therefore, that most if not all of the specimens are merely used blades or biface fragments from which a section has been broken off, either accidentally or intentionally, but without recourse to an actual burin blow. *(Martijn and Rogers 1969: 230)*

The "combination tool" class is taken from Martijn and refers to an implement which possesses "one lateral cutting and one lateral scraping edge which converge to a point"

(Martijn and Rogers 1969: 232). A minor percentage of tools from all four components are involved in the preceding exclusions and modifications. It should also be mentioned that Martijn classifies the Haut Quai and Yadogami sites as "habitation–workshop sites," and therefore a quarry factor probably affects to some degree the artifact class frequencies.

Modifications to Lee's classification of the artifacts from Zone 2 of the Louis site (T. E. Lee 1965: 23–27) are as follows: the fragments from a single Late Woodland pottery vessel are regarded as intrusive and not related to the lithic assemblage (Wright 1968: 58); three of the knives (T. E. Lee 1965: Fig. 2, nos. 22, 29, and 30) are classified as projectile points; Fig. 2, nos. 6, 8, 9, and 15 are classified as scrapers; Fig. 2, no. 14 is a bifacial core flake, and for purposes of this comparison is therefore rejected as a biface blade fragment; Fig. 2, nos. 1 and 24 are classified as linear flakes; Fig. 2, no. 21 and the axe are classified as preforms; and Fig. 2, nos. 16 and 20 are classified as wedges.

Table 20 presents the frequencies of artifact classes for the eight sites or components from Quebec. A significant difference appears to exist between the sites in extreme western Quebec (Beach, Bancroft, Pinder's Paradise, and Louis) and the Mistassini–Albanel sites (Yadogami, Haut Quai, and Pointe de Camp). This difference is most clearly seen in the considerably higher frequencies of biface blades in the Mistassini–Albanel sites and the generally higher frequencies of scrapers and projectile points in the western Quebec sites. As was suggested earlier, a quarrying factor may be partially responsible for the high frequencies of biface blades at the more easterly sites, but even the Pointe de Camp site, which is interpreted by Martijn as a habitation site, had a very high occurrence of biface blades. The difference may also represent regional variations within the Shield Archaic of Quebec. Certainly the rather dramatic switch from large quartzite tools to small flint tools apparent in much of northern Ontario does not apply to the Mistassini–Albanel sites. In terms of later developments it should also be mentioned that Middle and Late Woodland ceramics occur in western Quebec (Rogers and Bradley 1953; T. E. Lee 1965; Burger 1953; Kennedy, personal communication), but are totally absent from the Mistassini–Albanel region.

Thus, it would appear that these two regions continue to be somewhat different through time. Martijn tentatively suggests that the Wenopsk complex of Mistassini–Albanel gives rise to the historic Mistassini Cree (Martijn and Rogers 1969: 344). If this should be the case, then the Wenopsk complex has retained in a most conservative fashion an earlier aspect of the Shield Archaic tradition stone technology. Silicious deposits other than quartzite and quartz appear to be absent from the region, and this may be a factor in the retention of an earlier "large tool" technology. Demonstration of a relationship between the Wenopsk complex and the Mistassini Cree is still a matter for future research. However, with the evidence of continuity between Shield Archaic and Laurel in northern Ontario, the probability of a relationship between the Shield Archaic and northern Algonkian-speakers is somewhat strengthened (Taylor 1964*a*: 192). The whole matter of a late survival of the Shield Archaic tradition in eastern Quebec is also tantalizingly suggested by a radiocarbon date of A.D. 727 ±45 (P-686) from the Blanc Sablon-4 site on the north shore of the Gulf of St. Lawrence (Harp 1964; Wilmeth 1971: 112). The carbon sample and a number of quartzite specimens (2 side-notched projectile points, 3 biface blades, and a scraper [Harp 1964: Pl. II, figs. a–e]) were recovered in situ from a soil horizon buried 18 in. below the surface.

Using the earlier criteria noted to the west, where biface blades decrease through time while scraper frequencies increase, there results a slightly different chronological arrangement of the Mistassini–Albanel components from that proposed by Martijn (Martijn and Rogers 1969: Table III). In both sequences, however, level 3 of the Yadogami site is the earliest component. As outlined in Table 20, the suggested sequence running from early to late is Yadogami (3), Haut Quai (2), Pointe de Camp (C-2), and Yadogami (2). The limited projectile point variety occurrences are as follows: Yadogami 3—lanceolate (2) and stemmed (1); Haut Quai 2—lanceolate (4) and side-notched (1); Pointe de Camp C-2—lanceolate (2), triangluoid (2), and side-notched (1); and Yadogami 2—side-notched (2). With reference to the scrapers in this sequence and

Table 20
Frequency of artifact classes for eight Shield Archaic sites or components in Quebec

	Mistassini–Albanel				Western Quebec			
	Yadogami 3	Haut Quai 2	Pointe de Camp Area C-2	Yadogami 2	Beach	Bancroft	Pinder's Paradise	Louis
Artifact class	f (%)	f (%)	f (%)	f (%)	f (%)	f (%)	f (%)	f (%)
Projectile points	3 (3.0)	5 (6.5)	5 (9.6)	2 (2.4)	31 (21.5)	5 (9.6)	5 (13.9)	7 (26.9)
Scrapers	15 (15.0)	7 (9.1)	14 (26.9)	35 (42.7)	63 (43.8)	25 (48.1)	20 (55.6)	8 (30.8)
Biface blades	67 (67.0)	50 (64.9)	23 (44.2)	33 (40.2)	40 (27.8)	14 (26.9)	8 (22.2)	2 (7.7)
Uniface blades	6 (6.0)	7 (9.1)	2 (3.8)	4 (4.9)	2 (1.4)	2 (3.9)	1 (2.8)	
Linear flakes	2 (2.0)		1 (1.9)	1 (1.2)				2 (7.7)
Preforms	4 (4.0)	2 (2.6)	4 (7.7)	4 (4.9)	2 (1.4)			2 (7.7)
Flake knives	1 (1.0)	1 (1.3)			1 (0.7)	1 (1.9)	1 (2.8)	
Core-scrapers	1 (1.0)	2 (2.6)				2 (3.9)		
Hammerstones		1 (1.3)		1 (1.2)	1 (0.7)	1 (1.9)		2 (7.7)
Wedges					4 (2.8)		1 (2.8)	2 (7.7)
Drills								1 (3.8)
Combination tools		2 (2.6)	1 (1.9)	1 (1.2)				
Miscellaneous	1 (1.0)		2 (3.8)	1 (1.2)		2 (3.9)		
Total	100 (100.0)	77 (100.0)	52 (99.8)	82 (99.9)	144 (100.1)	52 (100.1)	36 (100.1)	26 (100.0)

excluding Haut Quai with its seven specimens, large scrapers (in excess of 10 gm) increase and then decrease sharply, while end scrapers increase relative to other scraper varieties. Uniface blades are present throughout the sequence and exhibit no particularly significant trend. Both flake knives and core-scrapers are limited to the two earliest components. Projectile point variety frequencies for the western sites (Beach, Bancroft and Pinder's Paradise) are given in Table 13 (p. 43). From level 2 of the Louis site the following varieties were recovered: lanceolate (2), side-notched (2), trianguloid (2), and stemmed (1). To judge from the illustrations, most of the scrapers from level 2 of the Louis site are small (less than 10 gm).

Between 1964 and 1966, Charles A. Martijn carried out a survey and excavation program for the National Museum of Man in the Témiscouata region of southeastern Quebec. He obtained materials that appear to relate to the Shield Archaic. A radiocarbon date of 20 B.C. ±100, associated with a "Late Archaic assemblage" (Wilmeth 1971: 112) from the stratified Davidson site, suggests, as did the late date for the Blanc Sablon-4 site, the possibility of a late Archaic persistence in eastern Quebec. On the other hand, a date of 4550 B.C. ±180 from a culturally unidentified pit in the McInnes site (Wilmeth 1971: 113) indicates that the Témiscouata region supports a considerable antiquity. The eventual position of the Témiscouata sites and their relationship to the Shield Archaic must await Martijn's final report.

The workshop sites at Tadoussac (Speck 1916; Wintemberg 1943; Lowther 1965) bear slight relationship to either the Shield Archaic or Laurentian traditions as they are currently understood. Indeed, the Tadoussac assemblage appears to represent a very local situation largely restricted to the lower St. Lawrence Valley, whereas Laurentian sites appear to be basically limited to the upper St. Lawrence Valley and the Eastern Townships (Lévesque 1962; Ribes 1964, 1966) of the province. The odd diagnostic Laurentian trait does occur farther to the north in association with Shield Archaic materials (Burger 1953; T. E. Lee 1965), but these occurrences are very limited. The obvious quarry function of the Tadoussac sites has almost certainly blurred their external relationships.

New Brunswick

Survey and excavation by David Sanger in the north-central highland region of New Brunswick has produced materials related to the Shield Archaic tradition, which he has called the Tobique complex. Although Sanger has submitted a paper describing the Tobique complex, he kindly allowed me to analyze the collection since our descriptive criteria are somewhat different. With a single exception, all the specimens are fashioned from a local ryolite. The site is interpreted to be a fishing station located by a salmon pool where the manufacture of stone tools formed a supplementary activity. The workshop nature of the site, as expressed by the artifact assemblage, appears to be secondary to its food exploitation function, and therefore it is possible to use the collection for comparative purposes. As stated earlier, workshop sites have been avoided in the comparisons, as the specialized quarrying factor disrupts both the frequencies of artifact classes and the occurrences of finished implements. Drawings provided by Dr. Sanger are to be seen as Plates XXVII and XXVIII.

Table 21
Frequency of artifact classes (Dead Man's Pool site)

Artifact class	f	%
Projectile points	12	11.2
Scrapers	28	26.2
Biface blades	48	44.9
Uniface blades	2	1.9
Linear flakes	5	4.7
Preforms	7	6.5
Flake knife	1	0.9
Hammerstones	2	1.9
Core-scraper	1	0.9
Graver	1	0.9
Total	107	100.0

Projectile point varieties are represented by the following: lanceolate (5), stemmed (2), trianguloid (1), side-notched (1), corner-notched (1), and fragmentary (2). Of the 28 scrapers only two weighed less than 10 gm.

The large scrapers consisted of 12 end scrapers, 10 random scrapers, and 4 side scrapers. A random scraper and a side scraper represented the small scraper category.

On the basis of temporal criteria for Shield Archaic sites to the west, the Dead Man's Pool site would appear to be relatively early. This placement is suggested by the artifact class frequencies and the projectile point and scraper varieties.

By referring to Table 20 it can be seen that in terms of artifact class frequencies the Dead Man's Pool site bears a startling resemblance to the Pointe de Camp component in Quebec. Indeed, the New Brunswick site relates far more closely to the Mistassini–Albanel components than it does to the western Quebec sites, thereby suggesting the possibility of an eastern spatial variation within the Shield Archaic that maintained an emphasis upon large implements derived from massive silicious deposits such as quartzite and ryolite.

The data from New Brunswick are still very limited. However, the nature of the assemblage from the Dead Man's Pool site and other scattered information suggests that Shield Archaic people occupied an as yet unknown portion of the north-central New Brunswick highland, an area known historically for its large caribou herds. The material that I have examined from Témiscouata in nearby Quebec offers spatial continuity to this distribution. Also Dr. Sanger has tentatively suggested that, on the basis of his knowledge of artifact distributions, the Laurentian Archaic specimens are generally restricted to the southern portions of the province. At a premature and speculative level it may be suggested that two different Archaic populations and/or technologies occupied different ecological niches in New Brunswick, with the Shield Archaic exploiting the caribou–fish resource of the highlands and the Laurentian Archaic exploiting the coastal and riverine resources of the lowlands.

Nova Scotia

In March 1970 Mr. Brian Preston, Curator of History of the Nova Scotia Museum, Halifax, was examining archaeological materials residing in the Archaeology Division collections of the National Museum of Man, Ottawa. During his examination he encountered a small collection from North Cape, Cape Breton Island, which, after consultation with David Sanger, was brought to my attention as a possible component of the Shield Archaic. The material from the McEvoy site does, indeed, relate to the Shield Archaic. Additional specimens have been recovered from the site but are not available at this writing. A single tanged projectile point (Plate XXIX, fig. 5) does not fit the rest of the assemblage, and is more typical of the late Laurentian Archaic of the Maritimes. A rough estimate of the age of this single specimen is 1500 B.C. Such an age estimate would not, in my opinion, be unreasonable for the rest of the assemblage. As has been noted elsewhere, the association of Laurentian traits with Shield Archaic where these two traditions are in geographical proximity is more the rule than the exception.

Table 22
Frequency of artifact classes (McEvoy site)

Artifact class	f	%
Projectile points	9	40.9
Scrapers	5	22.7
Biface blades	5	22.7
Uniface blades	2	9.1
Flake knife	1	4.5
Total	22	99.9

Although the collection from the McEvoy site is small and was all recovered from the surface of a ploughed field, it exhibits striking similarities with Shield Archaic material farther to the west. All the artifacts, with a single already-mentioned exception, fit into the Shield Archaic artifact range as currently understood. Further, both the artifact class frequencies and the specific artifact attributes are consistent with other Shield Archaic sites while being markedly dissimilar to Laurentian sites. And, as was the case with the highlands of New Brunswick, the Cape Breton highlands harboured considerable numbers of Woodland caribou until the advent of Europeans.

Newfoundland

The island (Newfoundland) and the mainland (Labrador) portions of the province of

Newfoundland will be considered separately inasmuch as the pertinent archaeological evidence from the two regions appears to be somewhat different. Published data are most abundant for the southern Labrador coast (Harp 1964), and there is limited information from the northern coast (Strong 1930). Data from the Labrador interior are both limited and unpublished except for preliminary statements (Fitzhugh 1969, 1970; MacLeod 1968, personal communication).

No convincing evidence of the presence of Shield Archaic sites on the island of Newfoundland has yet been uncovered. The occasional items that could occur on a Shield Archaic site are sufficiently ubiquitous to be equally at home in other assemblages. Along the Labrador coast the bulk of the Archaic materials relate to what I would loosely define as the Laurentian tradition, although Harp and Byers prefer the term *Boreal Archaic*, and Tuck, Fitzhugh and MacLeod have suggested the term *Maritime Archaic*. The problem appears to be mainly taxonomic, and will be examined in the section comparing the Shield Archaic with the Laurentian.

Three radiocarbon dates for two Laurentian sites on the southern Labrador coast, Forteau Bay-1 and Forteau Bay-3 (Harp 1963) are quite early, being 3449 B.C. ±58 (P-691) for the former and 4136 B.C. ±73 (P-687) and 4043 B.C. ±74 (P-688) for the latter (Wilmeth 1971). Projectile point varieties from the Forteau Bay-3 site are remarkably similar to projectile points from an even earlier component of the stratified Neville site in New Hampshire (D. F. Dincauze: handout and personal communication, 10th annual meeting of the Northeastern Anthropological Association, Carleton University, Ottawa, 7–9 May 1970). Southern Archaic influences to the north along the Atlantic coastal plain have been recognized for a number of years (Coe 1952, 1964; Byers 1959*a*). It now appears, however, that these influences extended as far as the northern Labrador coast at a very early time period and that, as integrated elements of a regional development which I would still classify as Laurentian, they retained their position on the coast until approximately 1000 B.C. If such was the case then there is a plausible explanation for the absence or near-absence of Shield Archaic traits in Newfoundland or along the Labrador coast. Paradoxically, however, a short distance to the west in Quebec, two sites located on the Gulf of St. Lawrence appear to be assignable to the Shield Archaic. These are the Blanc Sablon-4 and -6 sites. The former site has been radiocarbon dated at A.D. 727 ±45 (P-686) (Harp 1964; Wilmeth 1971).

Archaeological information from the interior of Labrador is very limited, and with the flooding of the large interior lakes this situation has been further complicated. Donald MacLeod recovered materials from Sandgirt and Lobstick Lakes prior to the flooding of the region. The FlDh-1 site produced biface blades, large irregular scrapers, preforms, a flake knife, and a number of large cobble cores. Most of the specimens were extensively water-tumbled. A possible bone beamer was also recovered. Two radiocarbon dates on bone both fell within the tenth century of our era. Another site, FlDe-1, produced a polished adze, a ground-slate stemmed projectile point with a triangular section, a cobble spawl retouched on one face, a large end scraper bifacially worked at the scraping face, and a large core. Although the data are limited, it is possible that FlDh-1 represents a Shield Archaic site. However, FlDe-1, with its ground stone items, reflects coastal influences.

William Fitzhugh's North West River sequence (Fitzhugh 1969, 1970) appears to possess a number of Shield Archaic elements, but until this sequence is described it is not possible to assess its position in the Shield Archaic tradition. The estimated time depth is 2000 B.C. to the present; Fitzhugh regards the sequence as being a basically interior adaptation, although some coastal contact is also apparent.

In summary, the possibility exists that the Shield Archaic penetrated the interior of Labrador but was blocked from the coast and the island of Newfoundland by the early and continuous occupation of these regions by another Archaic tradition. Once again the interior pattern of subsistence must have been centred on caribou and fish.

Palaeo-Indian and the Origins of the Shield Archaic

In the Introduction, the first hypothesis proposes that

The Shield Archaic evolved from a late Palaeo-Indian (Plano Tradition) cultural base in the eastern Northwest Territories and probably the western portions of the Boreal Forest–Canadian Shield.

This hypothesis was originally suggested by Harp, albeit in a different form, in his study of the archaeology of the lower and middle Thelon:

> Phase 3: Archaic stage Indian hunters. Represented by Complex C materials. Derived from the same basic interior tradition as Phase 1, and possibly largely evolved from it and other cultural expressions contemporaneous with this phase. *(Harp 1961: 63)*

In this study, Harp's Complex C is placed within the Shield Archaic, and his Phase 1 or Complex B is assignable to the Plano tradition. Both general and specific continuities are to be seen between Plano tradition sites such as Grant Lake (lower) and Shield Archaic sites in Keewatin District (Harp 1959*a*, 1961). Farther to the west, at the Acasta Lake site (Forbis 1961), a radiocarbon date of 5020 B.C. ±360 (I-3957) provides a temporal placement for the late Plano tradition in the Northwest Territories (Noble 1969).

Two Plano tradition sites in Keewatin District will be examined. These are the Grant Lake (lower) site on the Dubawnt drainage just south of Aberdeen Lake and the LeLd-2B site on the southwest portion of Schultz Lake, Thelon drainage. Although Harp has reported on both of these sites (Harp 1959*a*, 1961), additional specimens recovered by W. N. Irving from the Grant Lake site and the slightly different analysis criteria used by me necessitate a re-examination.

The Grant Lake collection was entirely recovered from the surface, and some cultural mixture is evident. The post Palaeo-Indian occupations, however, appear to have been very limited and are represented by some chithos, a Pre-Dorset side blade, and the odd other questionable item. Only the chithos and the side blade will be excluded from the analysis, and the vast majority of the other artifacts are assumed to belong to the Palaeo-Indian occupation. Specimens from the LeLd-2B site were all excavated from within a house structure, and therefore would appear to represent a single component. Harp's description of this somewhat irregular, rectangular-shaped structure measuring approximately 12 by 7 ft is as follows:

> SL-2B (Fig. 8) was located 40 yards southwest of A and at the same level, determined by traverse to be 230 feet above the lake. Excavation uncovered the outline of a dwelling, numerous chips, and 24 specimens, all at or near the junction of the thin topsoil with the underlying gravel. The central portion of the house floor was depressed slightly and covered to a depth of 5–6 inches by turf and a black, sandy soil. There was no sign of charcoal. The plan of the dwelling is not immediately clear, but two interpretations may be suggested: it might have been a 3-sided rectangular lean-to shelter open toward the east, or a similarly 3-sided wind-break shelter without a roof. In either case, the site is remarkable for the view that it affords of a wide stretch of country to the south and east, and for its command of the valley through which caribou regularly move northward early each summer. *(Harp 1961: 18–19)*

Table 23
Frequency of artifact classes for two Keewatin Palaeo-Indian sites

Artifact class	Grant Lake (lower)		LeLd-2B	
	f	%	f	%
Projectile points	42	47.7	3	15.8
Scrapers	19	21.6	6	31.6
Biface blades	19	21.6	4	21.1
Uniface blade			1	5.3
Flake knife	1	1.1		
Wedges	3	3.4	3	15.8
Linear flakes	3	3.4		
Spoke-shave	1	1.1		
Preforms			2	10.5
Total	88	99.9	19	100.1

The significance of Table 23 is markedly reduced by the low artifact sample from site LeLd-2B. While the frequencies of scrapers and biface blades at the two sites are roughly comparable, there is a much higher occurrence of projectile points from the Grant Lake site. Among the minor traits, only wedges occur at both sites. It is significant, however, to note the presence of a uniface blade at the LeLd-2B site.

If the hypothesis that Shield Archaic developed out of late Palaeo-Indian is correct, then in terms of the observed trends within the Shield Archaic tradition some fairly significant quantitative changes in the artifact classes must have taken place during the transition. For example, biface blade and scraper frequencies would have to increase markedly, and projectile point frequencies decrease. The hypothesis is not supported by major artifact class quantitative trends. Although the basic tool kits of the late Palaeo-Indian and Shield Archaic sites in Keewatin District are similar, the support for the hypothesized cultural continuity comes from specific qualitative traits rather than the gross quantitative trends of the artifact classes.

GRANT LAKE (LOWER) SITE

Projectile Points (42)

Of the 42 projectile points only six are complete. The majority are represented by basal fragments except for two tip and four mid-section fragments. No further consideration of the two tip and four mid-section fragments will be given, other than to note that one of the ends of a mid-section fragment was extensively blunted through use and that two other fragments, probably from Keewatin lanceolate points, possess burin blows.

Keewatin lanceolates (Plate XXX, figs. 1, 2, and 6)
Comment: These specimens, in terms of the majority of their attributes, are indistinguishable from Agate Basin points (Roberts 1943; Wormington and Forbis 1965: 20–21). In order not to further strain the credibility of Palaeo-Indian lanceolate-point typology, however, Harp's suggestion that they be called Keewatin lanceolates is followed. Of the 29 specimens, four are complete and the remainder are represented by basal fragments.
Form attributes: Base configurations are straight (15), convex (10), and straight or oblique fracture (4). Blade edge configurations are all convex, and cross-sections are elliptical (20), plano-convex (5), and diamond (4). Lateral and basal grinding occurs on 22 specimens, and seven specimens possess only lateral grinding. Burin blows using the broken edge of the projectile point as a striking platform occur on eight specimens. In one instance thinning flakes had been struck off at the mid-section break.
Metrical attributes:

Attribute	No.	Range	$\bar{x}$
Length	4	50–65 mm	56.0 mm
Base width	28	12–18 mm	14.4 mm
Maximum width	11	18–28 mm	23.3 mm
Thickness	11	8–10 mm	8.8 mm
Weight	4	8–16 gm	12.3 gm

Lanceolate (Plate XXX, figs. 3 and 4)
Comment: All four specimens are represented by basal fragments.
Form attributes: Base configurations are straight (3) and convex (1). Blade edge configurations are convex (3) and straight (1). Cross-sections are elliptical (3) and diamond (1). Lateral and basal grinding occurs on three specimens. One specimen exhibits some possible use as a wedge, and another specimen was burinated.
Metrical attributes:

Attribute	No.	Range	$\bar{x}$
Base width	4	17–21 mm	19.5 mm
Maximum width	3	23–30 mm	27.3 mm
Thickness	3	8–11 mm	10.0 mm

Side-notched (Plate XXX, fig. 5)
Comment: This specimen is virtually identical to side-notched points from later Shield Archaic sites, and is therefore not associated with the Palaeo-Indian occupation.
Form attributes: The cross-section is elliptical, and lateral grinding is present.
Metrical attributes: Length 71 mm, base width 19 mm, neck width 15 mm, shoulder width 21 mm, notch height 8 mm, notch depth 2 mm, thickness 10 mm, and weight 16 gm.

Stemmed
Form attributes: This specimen is incipiently stemmed along one side, and may simply represent an accidental variation of a Keewatin lanceolate. Moderately good collateral flaking is present as well as strong lateral grinding. The base is created by the point of percussion, and the cross-section is diamond (*see* Harp 1959*a*: Fig. 3, no. K, p. 418).

Metrical attributes: Base width 13 mm, neck width 20 mm, shoulder width 23 mm, and thickness 8 mm.

Trianguloid
Comment: Although quite small, this point possesses very fine retouch and probably belongs with the Palaeo-Indian occupation.
Form attributes: The base is represented by a straight fracture, and strong lateral grinding is present. Blade configuration is convex and the cross-section is elliptical.
Metrical attributes: Length 37 mm, base width 13 mm, maximum width 17 mm, thickness 7 mm, and weight 4 gm.

Scrapers (19)

There are 11 large scrapers (10 gm >) and 8 small scrapers.

Large Scrapers

The following varieties of large scraper are represented: end (7), side (3), and random (1).

End scrapers (Plate XXX, figs. 7 and 8)
Form attributes: Scraping faces occur as follows: end and both sides (4), end and one side (2), end only (1). The natural cobble cortex remains on the dorsal face of one specimen, and another has been used as a wedge, resulting in a marked concavity at the end scraping face. Another scraper possesses an oblique scraping face.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length (end face to base)	37–68 mm	49.7 mm
End scraping face width	31–53 mm	40.9 mm
End scraping face height	3–8 mm	6.0 mm
Weight	11–44 gm	20.4 gm

Side scrapers (Plate XXX, fig. 9)
Form attributes: One specimen has a single scraping face and the other two possess scraping faces along both long edges. One of the latter specimens (fig. 9) also has serrated edges. Scraping face configurations are straight (3) and convex (2).
Metrical attributes: Scraping face lengths range from 25 to 65 mm with a mean of 41.8 mm; scraping face heights range from 3 to 5 mm with a mean of 4.0 mm; and weight ranges from 20 to 39 gm with a mean of 27.7 gm.

Random scraper
This single specimen has two scraping faces, 26 and 31 mm in length, and 3 and 5 mm in height. Weight is 14 gm.

Small Scrapers

Scraper varieties weighing less than 10 gm consist of end (3), random (4), and side (1).

End scrapers (Plate XXX, fig. 10)
Form attributes: Scraping faces are as follows: end only (1), end and one side (2). One specimen has an oblique end scraping face.
Metrical attributes: Length ranges from 18 to 40 mm with a mean of 30.7 mm; end scraping face width ranges from 21 to 32 mm with a mean of 27.0 mm; end scraping face height ranges from 4 to 6 mm with a mean of 5.3 mm; and weight ranges from 3 to 9 gm with a mean of 6.0 gm.

Random scrapers
Form attributes: All four scrapers possess single scraping faces. One specimen exhibits some evidence of use as a wedge.
Metrical attributes: Scraping face lengths range from 16 to 39 mm with a mean of 23.8 mm; scraping face heights range from 2 to 4 mm with a mean of 3.3 mm; and weights range from 4 to 8 gm with a mean of 6.5 gm.

Side scraper (Plate XXX, fig. 15)
This unusual specimen may possibly be Pre-Dorset rather than Palaeo-Indian. Scraping faces occur along both edges but on opposite faces of the flake. Retouch is very fine, with numerous minute flake scars. Metrical attributes are as follows: length 47 mm; length of scraping faces 34 mm and 36 mm; height of scraping faces 2 mm and 4 mm; and weight 4 gm.

Biface Blades (Plate XXX, figs. 11, 12, and 17)

Comment: The 19 specimens consist of the following: bases (4), tips (3), mid-section fragments (2), and edge fragments (10). All four base fragments are convex. Only

four specimens lack evidence of strong use-dulling, and there are three clear instances of scraping faces on fragments. Most of the fragments are quite thin. For example, thickness of the four base fragments and two mid-section fragments ranges from 6 to 13 mm with a mean of 9.3 mm.

Flake Knife (Plate XXX, fig. 14)

The single flake knife possesses a bifacially retouched edge 41 mm in length. There is moderate evidence of use-wear along the cutting edge.

Wedges (Plate XXX, figs. 18 and 19)

Two of the wedges are made on flakes and the third specimen consists of a re-used projectile point fragment. Length, measuring between the two crushed ends, ranges from 20 to 44 mm with a mean of 34.3 mm; width ranges from 10 to 31 mm with a mean of 21.7 mm; thickness ranges from 5 to 9 mm with a mean of 7.0 mm; weight ranges from 2 to 12 gm with a mean of 7.7 gm.

Linear Flakes (Plate XXX, fig. 16)

The three linear flakes all possess clear bulbs of percussion at one end and have triangular cross-sections at mid-point. Length, mid-section width, thickness, and weight are as follows: 31 to 61 mm with a mean of 43.3 mm; 12 to 18 mm with a mean of 15.0 mm; 5 to 8 mm with a mean of 6.3 mm; and 2 to 8 gm with a mean of 5.0 gm.

Spoke-Shave (Plate XXX, fig. 13)

The single spoke-shave possesses a scraping face 32 mm long and 8 mm high, into which a concavity 7 mm wide and 2 mm deep was chipped. On the opposite face of the flake another scraping face 13 mm long and 3 mm high occurs.

LELD-2B SITE

Projectile Points (3)

Keewatin lanceolates (Plate XXXI, figs. 1–3)
Form attributes: As all the points are illustrated, it is not necessary to discuss general outline attributes. Cross-sections are all elliptical, and strong lateral and basal grinding is present on all the points. Two points, including the complete specimen, possess burin blows.
Metrical attributes:

Attribute	Range	$\bar{x}$
Length		53 mm
Base width	9–12 mm	10 mm
Maximum width		22 mm
Thickness	7–9 mm	8 mm
Weight		10 mm

Scrapers (6)

There are three large scrapers and three small scrapers.

Large Scrapers (Plate XXXI, figs. 10 and 12)
Two large end scrapers (fig. 10) and one large side scraper (fig. 12) are represented. One large end scraper possesses scraping faces at the end and along one side. This specimen retains the pebble cortex on the dorsal face and also possesses ventral retouch. Length, the width and height of end scraping face, and weight are 34 mm, 31 mm, 9 mm, and 24 gm, respectively. The remaining large end scraper is ventrally retouched, and possesses a scraping face along one side as well as at the end. Length, the width and height of the end scraping face, and weight are 57 mm, 17 mm, 7 mm, and 22 gm, respectively. The large side scraper has scraping faces along both edges and also possesses ventral retouch. Scraping faces are 44 mm and 47 mm long, and the heights of the scraping faces are both 10 mm. Weight is 15 gm.

Small Scrapers (Plate XXXI, fig. 11)
There are two small end scrapers and a small random scraper. Both of the end scrapers possess a scraping face at the end only. One specimen has an oblique scraping face as well as ventral retouch (fig. 11). Length, end scraping face width and height, and weight are 38 mm and 28 mm, 20 mm and 28 mm, 7 mm and 8 mm, and 7 gm and 6 gm, respectively. The random scraper has a single scraping face 27 mm long and 3 mm high. It also retains the original pebble cortex on the ventral surface and weighs 7 gm.

Biface Blades (Plate XXXI, figs. 4, 6, and 7)

Of the four biface blades, two are relatively complete and the other two consist of a base and mid-section fragment. The two complete specimens have the following lengths, widths, thicknesses, and weights: 60 mm and 89 mm, 27 mm and 42 mm, 11 mm and 9 mm, and 20 gm and 30 gm, respectively. Heavy to moderate use-wear is evident on all edges. The convex base fragment also exhibits use-wear on its surviving edges, as does the mid-section fragment.

Uniface Blade (Plate XXXI, fig. 5)

The single uniface blade is bipointed and plano-convex in cross-section. Moderate use-wear is evident along one edge, and on this same edge a scraping face 25 mm long and 2 mm high is present. Length, width, thickness, and weight are 58 mm, 29 mm, 9 mm, and 15 gm, respectively.

Wedges (Plate XXXI, fig. 9)

One wedge exhibits crushing on all four edges, while the remaining two have the more normal distinctive crushing on two opposing edges. Lengths between crushed edges range from 22 to 46 mm with a mean of 31.5 mm; widths of the opposing measurements are 39 mm and 38 mm. Thickness ranges from 8 mm to 10 mm with a mean of 8.7 mm; and weight ranges from 18 to 24 gm with a mean of 20.3 gm.

Preforms (Plate XXXI, fig. 8)

One preform is complete and the other is lacking its base. The complete specimen is irregular, measures 55 mm by 41 mm, is 17 mm thick, and weighs 40 gm. Use-wear or edge preparation dulling occurs on both edges. The fragmentary specimen also possesses the same use-wear or edge dulling.

Although the preceding data do not demonstrate the suggested continuity between Keewatin District Palaeo-Indian sites and Shield Archaic sites, they do contain sufficient cross-links to indicate that future data will indeed demonstrate the validity, or at least partial validity, of the hypothesis. For example, the very distinctive trait of burinating broken projectile points begins with the Keewatin District Palaeo-Indian sites and survives quite late in components such as House Structure I of the Aberdeen Lake site. This trait is totally absent from the cultural sequences farther west, including the Acasta Lake site (W. C. Noble, personal communication and examination). Also the Keewatin lanceolate projectile points imperceptibly fade into a more generalized lanceolate form which is typical of the early Shield Archaic. Indeed, the segregation of a series of these lanceolate forms, beginning with the Keewatin lanceolates, becomes a very arbitrary matter. The presence of a single uniface blade—a Shield Archaic diagnostic—at the LeLd-2B site is also important. Finally, both the basic tool kits and certain limited specific traits, such as serrated-edge side scrapers, help in a preliminary, or perhaps premature, sense to bridge the still extant gap between the Palaeo-Indian and Shield Archaic sites of Keewatin District.

It is unfortunate that materials relating to the Palaeo-Indian period are virtually absent from the western portions of the Shield Archaic distribution. A site in Rainy River District in the southwestern portion of northern Ontario has produced Agate Basin, generalized lanceolate, side-notched, and stemmed projectile points (W. A. Kenyon, personal communication and examination). The frequencies of major artifact classes from this site are as follows: projectile points, 8 (42.1 per cent); scrapers, 3 (15.8 per cent); biface blades, 6 (31.6 per cent); and flake knives, 2 (10.5 per cent). As will be noted in the section comparing Shield Archaic sites with roughly contemporaneous sites on the Canadian prairies, the correspondences are closer than with any other adjacent and contemporaneous assemblage. Future data may possibly reveal that at least some of the Shield Archaic antecedents were derived directly from the Plains. At this writing, however, the best ancestors for the Shield Archaic people are the Palaeo-Indian caribou hunters of Keewatin District.

The Shield Archaic and the Laurentian Archaic

Before examining the relationship between the Shield Archaic and the Laurentian Archaic or, more to the point, the lack of relationship, it is very necessary to consider what is actually involved in the term *Laurentian Archaic*. I take on this task with limited hope of success, as it has been a problem that has engendered considerable heat and relatively little resolution. The most recent statements by W. A. Ritchie are as follows:

> The Laurentian may perhaps best be regarded as an extensive Archaic cultural continuum, widely spread throughout northeastern North America, with its major area of development and diffusion within southeastern Ontario, southern Quebec, northern New England, and northern New York. *(Ritchie 1965: 79)*

> The Laurentian, as I originally conceived and published it in 1938 and 40, following our discoveries on the large Brewerton sites in 1937 and 38, was regarded as an aspect, in the sense of the Midwestern Taxonomic system (Ritchie 1938: 106-7; 1940: 1-2, 93-8; 1944: 235, 264 ff). I have since then, successively considered it in ever broader taxonomic terms, viz., a phase, a tradition and an elaborating tradition, under which concept the Laurentian has emerged as a series of regionally elaborated cultural manifestations, based upon an extensive and little known Archaic continuum widely spread throughout northeastern North America, which underwent additions from time to time and place to place, of various traits or attributes. *(Ritchie 1968: 4)*

Douglas S. Byers (1959*a*: 254) has proposed a Boreal Archaic stage subdivided into a "Maritime Boreal Archaic and a Laurentian Boreal Archaic." The Boreal Archaic stage

> would include Frontenac, Brewerton, Vosburg, Vergennes, Tadoussac, the Moorehead complex, Newfoundland Aberrant, and the Old Stone culture of Labrador. All show points in common. They are as familiar as a contemporary class picture from another school—the clothes and poses are familiar, but the faces are different.

Elmer Harp accepted the concept of a *Boreal Archaic* in his southern Labrador and Newfoundland study (Harp 1964). Most recently James A. Tuck has proposed a *Maritime Archaic* (personal communication), which is not, as I understand Tuck, entirely equatable with Byers's Maritime Boreal Archaic. The lack of agreement on a common taxonomic term for these Archaic manifestations of northeastern North America appears to stem basically from the differing emphasis of various researchers. There is a series of index fossils or traits that are diagnostic of these populations and occur across the entire area, albeit generally in low frequencies. These are the ground slate ulus, bayonets and projectile points, plummets, gouges, and bannerstones. If the emphasis is placed upon these index traits, one taxonomic unit results. If, however, the emphasis is placed upon the remaining traits, which make up the vast bulk of any single regional assemblage, then a number of taxonomic units are the result.

Although I am in basic agreement with Byers's separation of the Boreal Archaic into an interior variety and a coastal variety, I believe that needless confusion resulted from substituting *Boreal* for the earlier term *Laurentian*. At the broadest taxonomic level I would argue for the usefulness of a limited number of index fossils acting as the cement for a number of regional Archaic manifestations which are collectively subsumed under the term *Laurentian Archaic*. I would further regard the Laurentian Archaic as a co-tradition rather than a single elaborating tradition. Such a scheme would allow the flexibility required by a series of developing Archaic traditions that shared, to varying degrees in time and space, a number of common traits. Both the index fossils and other traits indicate that substantial interaction took place within this proposed co-tradition, and the use of the former as a taxonomic device to hold this whole amorphous structure together is, in my opinion, the most effective device currently available to researchers in the area. Both the palpable differences between the coastal and interior varieties of the Laurentian Archaic and the various regional developments in either of these areas demand a very flexible system until the hoped-for day when vastly increased data will permit a more realistic system.

With reference to the major protagonists in this taxonomic problem I would agree with W. A. Ritchie that the term *Boreal Archaic* is a misnomer and that the term *Laurentian* should be retained. On the other hand, I cannot agree that the Laurentian Archaic is "based upon an extensive and little known Archaic continuum widely spread

throughout northeastern North America" (Ritchie 1968: 4), and would, with qualifications, support Byers's arguments that the coastal manifestations of what I would still call Laurentian Archaic are significantly different from the interior manifestations.* The available evidence suggests to me that at an early period the coastal Laurentian Archaic derived a very significant percentage of its traits from southern coastal influences and/or movements, whereas the interior Laurentian Archaic owes much of its character to Archaic period developments to the west of its distribution. As such, I would see two geographically distinct areas giving rise to the Laurentian Archaic rather than a single "elaborating tradition." Actual interior Laurentian penetration to the coast appears to have been sudden and short-lived. Perhaps with more data and a more detailed handling of these data it will be possible to clearly demarcate these coastal-southern and interior-western aspects of the Laurentian Archaic and discard the taxonomic device of using minor index fossils to hold the whole structure together. Such a device is convenient but it is also, in large part, artificial in terms of actual culture history.

While I am throwing myself into this extremely complex problem in such a cavalier manner I would also say that I disagree with Byers's statement:

> Few people have yet perceived the possibility that divergences among sites and regional variations of Archaic cultures might be resolved by regarding the Archaic as a cultural stage, spread across the continent and modified by environmental conditions to which response was made in a way best suited to meeting local problems of subsistence. *(Byers 1959b: 232)*

The Archaic, in my opinion, is a period that is separated from the Woodland period by the appearance of a single trait—pottery. The appearance of pottery provides a convenient basis for cutting up the time column, and as more data are amassed the continuities between these two periods are being clearly demonstrated. The Woodland period was initiated by the adoption of a single trait by indigenous Archaic populations and does not represent the beginning of a new cultural stage. In this sense I am in left-handed agreement with W. H. Sears (1948).

Table 24 presents the artifact class frequencies for seven Laurentian Archaic sites. The references are as follows: MI-6 (Kennedy 1967), Robinson and Oberlander (Ritchie 1944), Bannerman (Ritchie 1958), KI (Ritchie 1965, 1968, and personal examination), Wapanucket 6 (Robbins 1960), and Forteau Bay-3 (Harp 1964). Minor term changes have been made in these data to accommodate the criteria used in this report and to reduce the table to a manageable size.

The sites run geographically from west to east; the first five sites are interior Laurentian sites and the last two sites are coastal Laurentian sites. The Morrison Island (MI-6), Robinson, and Oberlander sites are Brewerton phase, the Bannerman site is tentatively assigned to the Vosburg phase, the KI site is Vergennes phase, and the last two sites do not have phase designations. Pertinent radiocarbon dates are as follows: MI-6, 2750 B.C. ± 150 (GSC-162); Bannerman, 2524 B.C. ± 300 (M-287); KI, no date, but a recent reading from a late Vergennes component at the Allumette Island site (Kennedy, n.d.) gave a reading of 3290 B.C. ± 80 (S-509); Wapanucket 6, 2300 B.C. ± 300 (M-764) and 2350 B.C. ± 250 (M-969); and Forteau Bay-3, 4136 B.C. ± 73 (P-687) and 4043 B.C. ± 74 (P-688).

Before proceeding to a comparison of Shield Archaic and Laurentian Archaic, some consideration of the data in Table 24 is in order. The table indicates that the Laurentian Archaic, as envisioned in this report, contains some fairly broad variations on a not-too-common theme. When the temporal and spatial factors are considered, however, the fact that a theme does maintain itself is significant. With the exception of the Forteau Bay-3 site, projectile point frequencies are high while scraper and biface blade frequencies are relatively low. The high frequency of biface blades and correspondingly low frequency of projectile points at Forteau Bay-3 site is at variance with this general pattern. Drills and the ubiquitous hammerstones occur in low frequencies on all seven

*Since the submission of this manuscript I have had an opportunity to examine the Maritime Archaic material recovered by Dr. J. A. Tuck from Newfoundland and Labrador, as well as manuscripts of Dr. W.W. Fitzhugh dealing with closely related materials from Labrador. On the basis of these examinations, I now concede that the term *Laurentian* would be extended beyond the bounds of credibility with reference to the sites in Newfoundland and Labrador and on the north shore of the Gulf of St. Lawrence.

sites. Celts, which include polished stone axes, adzes, chisels, and "polished stone scrapers," are missing only from the Wapanucket 6 site. Pestles and anvil stones are absent only from the extreme western and eastern sites. The frequencies of implements made from native copper clearly reflect the western source and distribution of these implements and/or raw material. Choppers are limited to the New York and Vermont sites.

Of the so-called diagnostic index fossils, only the gouge occurs on all seven sites. Plummets possess the next most continuous distribution, being absent only from the Forteau Bay-3 site. Ground slate ulus are absent from both the Brewerton sites (Robinson and Oberlander) and the Forteau Bay-3 site. Ground slate projectile points, including bayonets, are present on only three sites, but these include the western and easternmost sites. Bannerstones are limited to two of the New York sites and the single Vermont site. As it has been suggested that these widely distributed, diagnostic traits might act as the cement of an otherwise very loose structure, the combined frequencies of these traits for any single site are extremely significant. The frequencies, running from west to east, are as follows: MI-6 (1.9), Robinson (1.8), Oberlander (1.4), Bannerman (2.4), KI (16.4), Wapanucket 6 (2.7), and Forteau Bay-3 (10.9). If ground stone rods and grooved weights may be regarded as additional diagnostics, then the frequencies for the KI and Wapanucket 6 sites increase to 25.5 and 3.5, respectively. It is noted that, in general, the western sites possess the lowest frequencies of the combined diagnostics. It is also pertinent that the KI site, which possessed by far the largest frequency of these traits, is regarded by W. A. Ritchie as the "classic" Laurentian site. Of temporal significance is the fact that the two earliest sites, KI and Forteau Bay-3, both possess the highest frequencies of these traits, basically the ground slate projectile points, suggesting that their popularity possibly decreases through time. Also with reference to these two earliest sites it is interesting to note that after the Forteau Bay-3 site, the KI site possesses the next highest frequency of biface blades—a trait with a limited representation at the remaining five sites.

It is apparent that, particularly with reference to the western Laurentian sites, the frequencies of the "index fossils" are too low to be solely relied upon for designating a site Laurentian Archaic. General artifact class frequencies and a host of specific artifact varieties must, and indeed should, be relied upon as more meaningful designation criteria. It cannot be overemphasized that the "index fossils" are used as a convenient, if somewhat artificial, device to lump under a single term "a series of regionally elaborated cultural manifestations" (Ritchie 1968: 4) which did interact through time and space in such a fashion as to blur their respective discrete developments. Data from the Allumette Island site (Plate XXXII; Kennedy, n.d.) clearly indicate, particularly with regard to the projectile point varieties, that the Brewerton phase developed out of the Vergennes phase and that these phases represent early and late periods within a developing tradition characterized by, among other things, broad, side-notched projectile points. Indeed, at the Allumette site it is extremely difficult to classify the intergrades between the Otter Creek projectile points (Vergennes phase) and the Brewerton side-notched projectile points (Brewerton phase). In sharp contrast to the broad, side-notched projectile point varieties of the Vergennes–Brewerton development are the straight and contracting stemmed projectile point varieties of the coastal Laurentian sequence, which derive from antecedents geographically and historically distinct from the interior projectile point styles.

The foregoing far from satisfactory discussion was necessary prior to an examination of the relationship between the Shield Archaic and the Laurentian Archaic. Regardless of the eventual resolution of what is and what is not Laurentian Archaic, the populations subsumed under the term in this study are distinctively different from the Shield Archaic. These differences appear to be not only technological but also historical. Yet these two basically different, contemporaneous Archaic populations lived in close proximity to one another along an extensive boundary—a boundary established by physiography rather than politics. The available evidence suggests that the Shield Archaic populations were largely restricted to the Boreal Forest highlands of the Canadian Shield, where the combination of caribou

Table 24
Frequency of artifact classes for seven Laurentian Tradition sites

Artifact class	MI-6		Robinson		Oberlander		Bannerman-Str 2		KI		Wapanucker 6		Fortneu Bay-3	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Projectile points	323	49.8	1115	61.5	462	46.4	118	69.0	76	34.7	609	65.3	34	13.8
Scrapers			181	10.0	124	12.4	5	2.9	7	3.2	145	15.5	35	14.2
Biface blades			122	6.7	43	4.3	15	8.8	41	18.7	57	6.1	124	50.2
Ground ulus	1	0.2					1	0.6	4	1.8	8	0.9		
Plummets	1	0.2	1	0.1	2	0.2	1	0.6	2	0.9	5	0.5		
Gouges	8	1.2	26	1.4	11	1.1	2	1.2	3	1.4	12	1.3	5	2.0
Ground slate points	2	0.3							20	9.1			22	8.9
Bannerstones			6	0.3	1	0.1			7	3.2				
Drills	4	0.6	62	3.4	43	4.3	6	3.5	2	0.9	17	1.8	2	0.8
Celts	30	4.6	9	0.5	13	1.3	2	1.2	7	3.2			4	1.6
Hammerstones	23	3.5	26	1.4	7	0.7	2	1.2	15	6.8	41	4.4	4	1.6
Copper implements	256	39.5	22	1.2	34	3.4	1	0.6	1	0.5				
Abraders		8*	20	1.1	7	0.7	1	0.6	3	1.4				
Pestles			13	0.7	6	0.6	2	1.2	2	0.9	14	1.5		
Anvil stones			11	0.6	16	1.6	2	1.2	3	1.4	7	0.8		
Choppers			80	4.4	80	8.0	7	4.1	1	0.5				
Hammer-anvil-mano			19	1.0	19	1.9			2	0.9				
Flake knives			31	1.7	5	0.5	2	1.2						
Mano			8	0.4	14	1.4								
Paintstones			5	0.3	3	0.3								
Metates			4	0.2	3	0.3								
Palette			1	0.1										
Net sinkers			50	2.8	99	9.9	1	0.6						
Problematical					4	0.4								
Strike-a-lights							2	1.2						
Notched axe							1	0.6						
Perforated stones									1	0.5	2	0.2		
Preforms									2	0.9				
Stone rods									20	9.1				
Grooved weights											7	0.8		
Steatite bowl fragments											9	1.0		
Linear flakes													12	4.9
Burins													2	0.8
Chipped adzes													3	1.2
Total	648	99.9	1812	99.8	996	99.6	171	100.3	219	100.0	933	100.1	247	100.0

*Abraders represented more than half of the total artifacts from the MI-6 site (765) and were excluded because of their warp effect on percentages.

and fish probably represented the basis of their subsistence. In contrast, the Laurentian Archaic populations occupied the Great Lakes–St. Lawrence Forest zone and exploited the more varied and richer resources of the lake, river, and coastal areas. The distribution of Laurentian sites and artifacts throughout this region is much more dense than the equivalent distribution of the Shield Archaic to the north, suggesting that larger populations are involved in the former area. Indeed, the limited resources of the Boreal Forest in contrast to the more kindly endowed Great Lakes–St. Lawrence Forest virtually ensure a population density difference between the two regions.

In portions of Ontario and Quebec the dividing line between these two physiographic areas is quite sharp, and in these instances Shield and Laurentian Archaic sites are situated quite close to one another. For example, the Ottawa Valley was occupied by Laurentian Archaic populations, while as little as 50 miles to the north Shield Archaic sites occur. Contacts between the two populations are most clearly indicated by the presence of Laurentian traits on Shield Archaic sites, such as Fretz and Drunken Point and other sites on Lake Abitibi (T. E. Lee 1965) and Kempt Lake (Burger 1953). Reciprocal evidence from Laurentian sites is lacking, but this may be due more to the generalized nature of most Shield Archaic artifacts than to actual absence. The current evidence for Laurentian traits on Shield Archaic sites is extremely limited except at the Fretz site near Timmins, Ontario. In addition to a 2.3 per cent occurrence of Laurentian diagnostic traits (ground slate points and a gouge), there were polished stone celts, a ground slate knife, drills, and other items that are more typical of Laurentian sites than Shield Archaic sites. The frequency of projectile points (37.0) at the Fretz site was also much higher than is typical of Shield Archaic sites, although with a few possible exceptions (Plate IX, figs. 5 and 9) the projectile points are Shield Archaic varieties and not Laurentian.

The extent and nature of interaction between the Laurentian and Shield Archaic populations are problems that will require far more data than is currently available. Possibly, regional Shield Archaic groups were actively involved in providing copper implements and/or the raw material to the Laurentian Archaic occupants of the Ottawa Valley (Kennedy 1967, n.d.). Whatever the interplay between these two major Archaic groups it is apparent that, while they almost certainly traded, the amount of significant influence that they exerted upon one another was negligible. Even the basic tool kits are dramatically different, as can be seen by comparing Tables 12 and 24. To illustrate these differences more clearly in the frequencies of major artifact classes, Table 25 compares three Brewerton phase sites (MI-6, Robinson, and Oberlander) to three spatially close Shield Archaic sites in western Quebec (Bancroft, Beach, and Pinder's Paradise). These two site clusters are relatively close to each other, MI-6 being only 220 miles from the Beach site.

The marked differences in artifact class frequencies of the Laurentian and Shield Archaic sites in Table 25 clearly indicate that the two Archaic groups possessed, at least in archaeological terms, significantly different ideas of what constituted the basic tool kit of their respective traditions. The specific differences are equally, if not more, pronounced, but the nature of the published data does not permit effective quantitative–qualitative comparisons at this time. It should be noted that the bone assemblage of the Laurentian Archaic has not been considered, inasmuch as at present there does not exist comparative material from the Shield Archaic.

The available evidence suggests that two Archaic populations with different technologies and antecedents occupied different but adjacent physiographic zones. Interaction, probably based upon trade, took place, but must have been a minor element within both groups. Indeed, the relationship of the Shield Archaic to the Laurentian Archaic appears to have been quite similar to the historic relationship between the northern Algonkians and the Iroquois-speakers of the northeast. The denser and more complex populations on the northern periphery of the Great Lakes–St. Lawrence Forest zone traded for specific desirable items from the Boreal Forest, but had neither the desire nor ability to exert a strong influence on the area. In a reciprocal fashion the occupants on the southern periphery of the Shield received goods in exchange for eventual barter into the interior. The vastness and inhospitable nature of the northern bush,

Table 25
Comparison of the artifact class frequencies for three Shield Archaic and three Laurentian sites

	Shield						Laurentian					
	Bancroft		Beach		Pinder's Paradise		MI-6		Robinson		Oberlander	
Artifact class	f	%	f	%	f	%	f	%	f	%	f	%
Projectile points	5	10.0	31	22.0	5	14.0	323	50.0	1115	62.0	462	46.0
Scrapers	25	48.0	63	44.0	20	56.0			181	10.0	124	12.0
Biface blades	14	27.0	40	28.0	8	22.0			122	7.0	43	4.0
Uniface blades	2	4.0	2	1.0	1	3.0						
Wedges			4	3.0	1	3.0	?*		?		?	
Flake knives	1	2.0	1	1.0	1	3.0			31	2.0	5	1.0
Hammerstones	1	2.0	1	1.0			23	4.0	26	1.0	7	1.0
Core-scrapers	2	4.0										
Preforms			2	1.0								
Abraders								P**	20	1.0	7	1.0
Ground ulus							1	P				
Plummets							1	P	1	P	2	P
Gouges							8	1.0	26	1.0	11	1.0
Ground slate points							2	P	6	P	1	P
Bannerstones												
Drills							4	1.0	62	3.0	43	4.0
Celts							30	5.0	9	1.0	13	1.0
Copper implements							256	40.0	22	1.0	34	3.0
Pestles									13	1.0	6	1.0
Anvil stones									11	1.0	16	2.0
Choppers									80	4.0	80	8.0
Net sinkers									50	3.0	99	10.0
Miscellaneous	2	4.0							37	2.0	43	4.0
Total	52	101.0	144	101.0	36	101.0	648	101.0	1812	100.0	996	99.0

*Wedges have only recently been recognized; on the basis of personal examination of Laurentian chipping detritus, they are probably present on the three Brewerton sites.

**Abraders represented more than half the total of artifacts from the MI-6 site (768) and were excluded because of their warp effect upon percentages.

however, assured its sparse population of a limited number of exterior concerns while they expended the major part of their energies simply attempting to survive. Environmental determinism has raised the hackles on many a scholar's neck but, in the case of the Shield country, environment exerted a formidable deterministic effect upon the occupants of the area and an equally powerful negative effect upon outsiders. The environment, in a manner only partially understood, resulted in cultural homogeneity over enormous tracts of country. This spatial homogeneity not only characterized the prehistory of the Shield but is still reflected in the culture and language of the northern Algonkians, who extend from northern Alberta to the Labrador coast.

The Shield Archaic and the Plains Archaic

Only two components of the Plains Archaic —level 8 of the Long Creek site (Wettlaufer 1960) and zone 8 of the Mortlach site (Wettlaufer 1955)—are used for comparative purposes with the Shield Archaic. Both sites are located in southern Saskatchewan, and have been described and illustrated in such a fashion that it was refreshingly simple to arrive at equatable comparative units with those used in this report. Sample sizes are small, particularly for the Mortlach component, but they are the largest comparative samples available for the time span under consideration. Both components are regarded as contemporaneous with Shield Archaic occupations to the northeast. R. S. MacNeish's Larter site (MacNeish 1958), which represents a logical comparative unit, could not be used, as the criteria for artifact classification used by MacNeish could not be equated with the system used in this report, and time did not permit a re-analysis.

Table 26
Frequency of artifact classes from two Plains Archaic components

	Long Creek (Lv. 8)		Mortlach (Lv. 8)	
Artifact class	f	%	f	%
Projectile points	14	15.7	4	21.1
Scrapers	50	56.2	8	42.1
Biface blades	22	24.7	5	26.3
Hammerstones	2	2.2		
Drill	1	1.1		
Core-scapers (?)			2	10.5
Total	89	99.9	19	100.0

By comparing Table 26 and Table 12 it can be seen that, in general, the Plains Archaic components compare rather closely with Shield Archaic sites in terms of artifact class frequencies. Projectile point styles, however, are markedly different, and are most likely the product of completely independent developments.

Level 8 of the Long Creek site has been attributed to the Oxbow culture, and has two radiocarbon dates of 2670 B.C. ±80 (S-52) and 2700 B.C. ±150 (S-53) (Wilmeth 1971: 100). These dates correspond with other

Oxbow culture dates from level 7 of the Long Creek site and the Oxbow site, which are 2670 B.C. ±150 (S-50) and 3250 B.C. ±130 (S-44) respectively. Level 8 of the Mortlach site, the basal component of the site, has been called the Thunder Creek culture and has been radiocarbon dated at 1450 B.C. ±200 (S-2).

The relationship between the Plains Archaic and the Shield Archaic cannot be assessed at this time, but certain unpublished data suggest that eventually evidence will be uncovered that will indicate that a certain amount of interaction took place between the two groups. Projectile points recovered by R. W. Nero from the south shore of Lake Athabasca appear to relate to the Plains Archaic rather than to the Shield Archaic. This is also the case with many of the projectile point varieties that I have seen in private collections in The Pas area of Manitoba. Indeed, an Oxbow point was recovered from a multicomponent site in the Kenora area of northern Ontario. These distributions of Plains Archaic projectile point varieties on the periphery of, and even into, the Shield country suggest that some form of contact must have taken place. Indeed, the occasional occurrence on Shield Archaic sites of specimens manufactured from the Knife River chalcedony of North Dakota represents direct evidence of contact. Of all the contemporary populations adjacent to the Shield Archaic, the Plains Archaic bear the closest similarity in terms of their basic kit, that is the relative frequencies of the general artifact classes. At a very tentative level it may be suggested that there is a historical basis to this general similarity between the Plains Archaic and the Shield Archaic. Some evidence does exist that suggests that at least a portion of the Plains Archaic evolved out of a late Plano culture base on the Plains. At a very hypothetical level it may be suggested that these two Archaic manifestations both evolved from late Plano big-game hunters—the bison hunters of the Plains and the caribou of the tundra–taiga.

The Shield Archaic and the Pre-Dorset

The relationship between the Shield Archaic and the Pre-Dorset culture is of importance for several reasons. First, researchers such as Frank Ridley and T. E. Lee have argued for a core-blade technology and other Arctic Small Tool traits in the Shield Archaic which, if they occurred, would most likely have come from Pre-Dorset people. My reasons for rejecting this proposal are outlined in the section on Ontario in this chapter (p. 56). Conversely, I recall a prolonged discussion with W. E. Taylor and W. N. Irving concerning "Indian traits" in association with the former's Pre-Dorset sites on Banks and Victoria Islands in the high Arctic. W. N. Irving (1968: 47) favoured the view that the large quartzite biface blades, such as were recovered from the Buchanan site (Taylor 1964*a*), were direct evidence of Pre-Dorset contact with interior "Continental cultures." I, on the other hand, argued and still hold that these large implements of local quartzite are the products of Pre-Dorset quarrying activities and bear no relationship to Continental-culture Indians. With the exception of the biface blades, preforms, and a few of the random flake scrapers, there were no traits from the Buchanan site that could be confused with Shield Archaic materials. Indeed, a number of the biface blades with fine secondary retouch (Plate XXXIII, fig. 3) stand in marked contrast to the broad, percussion-flaked Shield Archaic biface blades. It can be seen on Plate XXXIII that all the typical Pre-Dorset implements, with the exception of the burins, were duplicated in the local quartzite.

At this writing I see no evidence of cultural interaction between the Shield Archaic and the Pre-Dorset. The apparent lack of contact is actually somewhat surprising, as these two contemporaneous groups were in relatively close proximity in both Keewatin District and northeastern Manitoba. Indeed, in the former area their tools are found together on the same sites, although the Pre-Dorset representation is certainly minimal. As will be discussed in the concluding chapter, there is also evidence that a thin Pre-Dorset population reoccupied the interior Keewatin District after its abandonment by the Shield Archaic. Despite the overlapping distributions of the Shield Archaic and Pre-Dorset and their contempo-

raneity, the two groups differ in every major respect. Both the basic tool kits and specific traits clearly point to completely different cultural traditions. Even their stone-working technologies are sufficiently different to allow the separation of a Pre-Dorset site from a Shield Archaic site on the basis of chipping detritus alone.

Table 27 compares the artifact class frequencies from three Pre-Dorset sites and a Keewatin District Shield Archaic component. The three Pre-Dorset sites are Buchanan (Taylor 1964*a*), which William E. Taylor kindly allowed me to examine, Thyazzi (Giddings 1956; Nash 1969), and Arnapik (Taylor 1968). The Shield Archaic component is House Structure I of the Aberdeen site. Acceptable dates from the Buchanan site are 960 B.C.±105 (1-2053) and 1040 B.C.±125 (1-2054) (Wilmeth 1971: 73–74). The estimates for the Thyazzi and Arnapik sites are 1500 B.C. (Nash 1969: 50) and 1500 to 1000 B.C. (Taylor 1968: 43), respectively. House Structure I of the Aberdeen site has been dated 1075 B.C.±90 (S-506). The dates and the estimates suggest that all four sites are roughly contemporaneous. In an examination of Table 27 it is important that the strong quarry factor so apparent at the Buchanan sites be taken into consideration.

The following modifications to the Thyazzi artifact classifications (Nash 1969: Table 1, p. 24) were made: burin spalls, blade-like flakes, worked or used pieces, and core fragments were excluded; end blades are equated with projectile points; scale-shaped pieces are classified as scrapers; blades are lumped with microblades; and pounders are equated with hammerstones. By using only the "Upper South Group" in Tables 1 to 12 (Taylor 1968: 18–23), the following modifications to the Arnapik site classification were made: end blades are equated with projectile points; oblique knife blade is equated with biface blade; perforator is equated with drill; edge spalls are excluded; bifacially retouched flakes are equated with flake knives; flake perforators are equated with gravers; and Tables 3, 4, 9, and 13 (Miscellaneous, Cores, Used Flakes and Refuse, and Burin Spalls) are excluded.

At both the Thyazzi and Arnapik sites, 51 per cent of the total assemblage is represented by burins and microblades. Indeed, these two sites equate quite closely at this level of comparison except for the significantly higher frequencies of side blades at Thyazzi and an equally significant higher frequency of projectile points at Arnapik. The Buchanan site deviates sharply from the preceding Pre-Dorset sites in having a very high biface blade frequency and relatively low burin and microblade frequencies. These deviations, particularly the first, are almost certainly the result of the quarrying factor at the Buchanan site. When the quarry factor at the latter site is taken into consideration, the preponderance of scrapers and biface blades and the absence of microblades and burins clearly separate, even at this gross level, the Shield Archaic component from the Pre-Dorset sites. The specific and general differences between the two stone technologies are so definite that it is difficult to conceive of any significant difficulty in accurately separating two accidentally mixed collections. Perhaps the distance between the two stone technologies reflects equally distant cultural values, similar to those seen historically between adjacent Athabascans and Eskimos, which would represent severe impediments to significant cultural interaction. Whatever the case, the available evidence, in my opinion, indicates that the amount of cultural interchange that took place between the Shield Archaic and Pre-Dorset peoples was nil.

Table 27
Comparison of the artifact class frequencies for one Shield Archaic component and three Pre-Dorset sites

	Shield Archaic		Pre-Dorset					
	Aberdeen (House Structure I)		Buchanan		Thyazzi		Arnapik	
Artifact class	f	%	f	%	f	%	f	%
Projectile points	17	18.0	67	31.0	15	9.0	192	29.0
Scrapers	36	39.0	37	17.0	18	11.0	91	14.0
Biface blades	33	36.0	58	27.0	10	6.0	1	P
Flake knives	3	3.0	1	P			4	1.0
Abraders	2	2.0						
Preforms	2	2.0	5	2.0			2	
Uniface blade			1	P				
Wedges			2	1.0				
Drills			1	P	4	2.0	1	P
Ground slate item			1	P				
Microblades			2	1.0	28	16.0	184	27.0
Burins			27	13.0	60	35.0	163	24.0
Problematicals			13	6.0	3	2.0		
Side blades					25	15.0	15	2.0
Gravers					2	1.0	18	3.0
Hammerstones					5	3.0		
Total	93	100.0	215	98.0	170	100.0	671	100.0

Chapter IV Conclusions

In Chapter I, five hypotheses concerning the Shield Archaic were briefly outlined and will now be re-examined. Before proceeding, however, it is deemed advisable to refer to the definition of *hypothesis* contained in the Concise Oxford Dictionary: "Supposition made as basis for reasoning, without assumption of its truth, or as starting-point for investigation; groundless assumption."

The following hypotheses hopefully relate to the first portion of the definition.

Hypothesis 1
The Shield Archaic evolved from a late Palaeo-Indian (Plano tradition) cultural base in the eastern Northwest Territories and probably the western portions of the Boreal Forest–Canadian Shield.

As has already been mentioned, Elmer Harp in his study of the archaeology of the lower and middle Thelon first recognized the continuity between the Plano tradition and the following Complex C, or what is referred to as Shield Archaic in this report. The section on "Palaeo-Indian and the Origins of the Shield Archaic" in Chapter III suggests that the continuities are reflected more in the continuation of certain specific traits than in general artifact class trends. For example, the very distinctive technique of burinating broken projectile points begins with the Keewatin lanceolate points, which would date between 7,000 and 8,000 years ago, and ends with the predominantly small side-notched points found in the 3,000-year-old House Structure I of the Aberdeen site. The subtle intergrades between the Keewatin lanceolate points and the generalized lanceolate points of the early Shield Archaic suggest Palaeo-Indian antecedents for the latter style of point. Other traits, such as serrated-edge side scrapers, uniface blades, and the use of projectile point or biface blade fragments for wedges, also assist in spanning the gap between Palaeo-Indian and Shield Archaic sites in Keewatin District. At a more general level the basic tool kits of both groups are quite similar, although at present a discontinuity exists in terms of artifact class trends through time. Certainly the subsistence patterns were similar if not identical.

While the relationships between Plano and Shield Archaic are most clearly seen in the Keewatin record, it would be naive to interpret the Keewatin District as the fountainhead for the entire Shield Archaic. Very probably, southern Palaeo-Indian hunters from the plains also contributed to the formation of the Shield Archaic. Evidence for more southerly Plano–Shield Archaic relationships at this writing, however, are very tenuous. Indeed, the probability of early hunters from the plains expanding into the forests, taiga, and barrens to the north and east in search of caribou poses major and difficult problems for future archaeological research.

Even now it is becoming apparent that the late Palaeo-Indian occupation of the north is represented by a number of regional varieties. For example, the related and contemporaneous sites of Acasta Lake in Mackenzie District and Grant Lake in Keewatin District clearly represent regionally distinct varieties of the Plano tradition. It is also apparent that these regionally distinct populations passed on their local character to later regional developments, with the result that the entire interior Keewatin sequence differs in a number of important respects from the central Mackenzie sequence. W. C. Noble's research in the central Mackenzie District will be of vital importance to an understanding of the relationships between the two areas. Farther to the west in the Mackenzie drainage and the Yukon, quite different developments appear to have taken place. Indeed, in terms of the continental northern territories of Canada the culture clines appear to be running north and south rather than east and west.

The late Palaeo-Indian situation in the north has been further complicated by the presence of Plano-like projectile point styles that date much later in time. Actual specific similarities between these northern lanceolate points and Plano tradition varieties to the south are not, in my opinion, all that strong. The general lanceolate form and the frequent occurrence of relatively good collateral flaking, however, often result in such specimens being equated with Palaeo-Indian varieties. Both W. C. Noble and Robert McGhee have uncovered information suggesting that these points can be quite late in time. Excavations by McGhee in the Bloody Falls area near the mouth of the Coppermine River have produced consistently late dates for these Plano-like points. At the Lapointe site, for example, two readings from a single bone sample were 780

B.C. ±90 (S-467) and 1190 B.C. ±120 (GX-1702) (McGhee 1970). There does appear to be the real possibility that a late, independent projectile-point technology, resembling late Palaeo-Indian, existed in portions of the Mackenzie District.

The demonstration, negation, or modification of the hypothesis that the Shield Archaic evolved from a late Palaeo-Indian base lie in the future. Certain positive lines of evidence exist, but a far greater body of data from both temporally and spatially key sites will be required to test the hypothesis. It is also anticipated that the techniques of analysis will play a major role in any assessment. Unless the Palaeo-Indians disappeared into thin air, there is hope that the products of their descendants will eventually be recognized.

Hypothesis 2
Plant and animal reoccupation of land freed by the retreating Laurentide ice permitted northwestern Plano-Shield Archaic hunters to expand, particularly in an easterly direction.

The data pertinent to the Laurentide retreat, subsequent tundra, taiga, and forest expansion, as well as faunal exploitation of the newly established plant resources would certainly fill a number of volumes. These, it may be added, would contain a number of conflicting interpretations. Even with the retreat of the ice, post-glacial features, such as marine submergence (Tyrrell and Champlain seas) and glacial lakes (Agassiz and Barlow-Ojibwa), would have acted as temporary barriers to the penetration of post-glacial flora and, particularly, fauna. In terms of the general retreat of the continental ice sheet, however, a time gradient does exist as one advances eastward.

It is probable that the area southeast of Great Bear Lake was ice-free by 8000 B.C. and that the Laurentide ice had retreated into the Keewatin Ice Divide by 5000 B.C. (Craig and Fyles 1960; H. Lee 1959), although other evidence suggests that Keewatin may have been free of ice as early as 6000 to 7000 B.C. (Falconer et al., 1965; Irving 1968). Glacial retreat in northern Ontario north of the Great Lakes began around 9000 to 7500 B.C. (Terasmae and Hughes 1960) but was not completed in the James Bay area until 6000 to 5500 B.C. (H. Lee 1960). In Quebec the Mistassini area appears to have been ice-free by 5000 B.C. (Martijn and Rogers 1969: 35–36), and the final destruction of the Laurentide ice took place in the Labrador highlands around 3800 B.C. (Trautman and Willis 1966: 188). The time it took for plants to establish themselves in the ice-free areas was probably quite variable and depended upon regional conditions. It can be assumed that the predators, probably including man, were close on the heels of the herbivores as they advanced into the new areas (*see* Martijn and Rogers 1969: Ch. II). Presumably, it was the caribou that was the major herbivore to exploit the new territories—a not unexpected event when it is realized that a tundra–taiga environment probably prevailed.

From what directions and in what concentrations Plano–Shield Archaic hunters moved into the new areas is probably as complex as the movements of the major food resource—caribou. Plano tradition hunters flanked the area to the west and were thinly distributed along the southern boundary at sites such as Brohm (MacNeish 1952*b*), Sheguiandah (T. E. Lee 1957) and George Lake (Greenman 1943), and even as far east as Thompson's Island in the St. Lawrence River (Ritchie 1965). The available evidence, however, indicates that the greatest Plano tradition concentrations were to the west, and it is from this region that the major eastward shift is assumed to have taken place. This, of course, does not negate some northward penetration. It is inferred that caribou-adapted hunters would more readily exploit the new tundra regions than more southerly hunters with somewhat different exploitation patterns. In view of both the relative lateness and the ongoing nature of this population expansion, it is necessary to resort to the expression *Plano–Shield Archaic* since events appear to overlap the cultural transition proposed in the first hypothesis.

If the proposal is essentially correct that western caribou hunters were the first people to occupy the eastern Canadian Shield region, it would offer plausible explanations for both the relative homogeneity of the Shield Archaic throughout the extensive area of the Boreal Forest–Canadian Shield and the apparent late penetration and survival of the Shield Archaic in the extreme east.

Hypothesis 3
Cultural continuities between the Shield Archaic and subsequent developments in the Boreal Forest–Canadian Shield permit the speculation that the Shield Archaic people probably spoke an Algonkian language.

This hypothesis will undoubtedly elicit cries of anguish from a number of scholars. At the worst, it can be written off as an unwarranted speculation and, at the best, it may be of some use to linguists involved with lexico-statistical techniques. Of the six possible linguistic affiliations with the Shield Archaic, Algonkian seems the most logical, and some tenuous evidence does add support to the proposal. The six possible linguistic affiliations are as follows: (1) Algonkian, (2) Eskimo, (3) Athabascan, (4) a language no longer resident in the area, (5) an extinct language, and (6) two or more languages.

I believe that the current archaeological record can safely exclude Eskimo as a candidate. The time depth of the Shield Archaic would not support the linguistic evidence that the spread of Athabascan to the east, as well as the south, was both late and sudden. The possibility that the Shield Archaic people spoke a language no longer resident in the area, or an extinct language, carries with it the probability of a major cultural discontinuity in the prehistoric record, and this does not appear to be the case. The final possibility—that the Shield Archaic people spoke two or more languages—is somewhat weakened by the cultural homogeneity of the Shield Archaic and the linguistic and cultural homogeneity of the historic northern Algonkians that occupied approximately the same area. Also, varying degrees of cultural continuity appear to exist between the Shield Archaic and historic Algonkian-speakers in both Quebec (Martijn and Rogers 1969: 348) and Ontario. Tenuous as the evidence is for cultural continuity from Shield Archaic to historic Algonkian, it is no more tenuous, in my opinion, than the proposal that the heartland of Proto-Algonkian

> lay in the region between Lake Huron and Georgian Bay and the middle course of the Ottawa River, bounded on the north by Lake Nipissing and the Mattawa River and on the south by the northern shore of Lake Ontario, the headwaters of the Grand River, and the Saugeen River. *(Siebert 1967: 40)*

Siebert's stimulating study, which places the Proto-Algonkian in the region described above at 1200 B.C., unfortunately straddles portions of the two major prehistoric culture areas in Ontario (Wright 1969: 4–7), necessitating a bicultural heritage for Algonkian.

Hypothesis 4
The Shield Archaic populations of the Keewatin District abandoned the area some time about 1000 B.C.

The southern half of Keewatin District appears to have been occupied continuously by late Palaeo-Indian to late Shield Archaic caribou hunters. There is evidence that at about 1000 B.C. this cultural continuity is broken. The component represented by House Structure 1 of the Aberdeen site, with its date of 1075 B.C.±90 (S-506), is regarded as being close to the end of the interior Keewatin sequence. Climatic change may have been responsible for the abandonment of Keewatin District by late Shield Archaic hunters. At approximately 1500 B.C., climatic change resulted in the southward retreat of the tree line up to distances of nearly 200 miles. This event roughly correlates with the incipient appearance of Arctic Small Tool people (Pre-Dorset).

It is proposed that a deterioration in the weather, causing a retreat of the tree line, forced the Shield Archaic occupants farther south and opened the area to deeper penetration by the Pre-Dorset people. The assumption that Shield Archaic hunters were dependent upon the forest and exploited the barrens only on a seasonal basis is supported by work in the Back River–Franklin Lake area of northern Keewatin in 1970. During the work in northern Keewatin we encountered only Eskimo remains and, indeed, the farther the survey moved into the interior the sparser became the evidence of occupation. As this area is too distant for seasonal commuting by forest-adapted Indians, it would appear that the prehistoric Indian occupants of Keewatin were unable to exploit the barrens on a yearly basis—if they had done so, one would expect to find their remains in the northern portions of the District. There is still the problem of whether the Pre-Dorset hunters moved into an abandoned territory or whether they exploited the area at different seasons

or at the same time as the late Shield Archaic hunters.

Later occupations of the region are extremely late. The Caribou Eskimo occupation is historic, and the limited number of small notched and stemmed points that could possibly be attributed to the Chipewyan should date some time after the birth of Christ.

Hypothesis 5
The relationship between the Shield Archaic and adjacent contemporaneous populations appears to have been both relatively limited and insignificant in terms of cultural innovation.

The relationship of the Shield Archaic to its neighbours has been considered in Chapter III. Evidence for contact, presumably reflecting trading patterns, with the Laurentian Archaic to the southeast and the Plains Archaic to the southwest has been presented. The nature of the McCollum burial site south of Lake Nipigon also suggests that certain religious beliefs were being introduced in the area from the south. There is a complete lack of evidence of contact between Shield Archaic and Pre-Dorset populations.

Significant reciprocal or unilateral culture contacts between the Shield Archaic and adjacent and contemporaneous populations appear to be lacking. The reasons for this situation are probably many, but environment must have been a major factor. As I have stated in an earlier paper:

> A number of factors are probably involved in this unusual cultural continuity over large areas but, in my opinion, the dominant factor is environment. Referred to by a colleague as "the infertile crescent," the region under consideration placed stringent demands upon its occupants and the small nomadic bands, ranging over large tracts of land in order to survive, are a necessary prerequisite for the apparent cultural similarities seen over extended areas. It is significant that the horizontal cultural homogeneity reflected by the archaeological record is maintained by the distribution in the northern forests of the linguistically and ethnologically related Cree, Ojibwa, Algonkin, and Montagnais–Naskapi. *(Wright 1968: 67)*

This initial and very preliminary examination of the Shield Archaic contains a multitude of limitations, factual and interpretational. Such limitations are to be expected when the extent of the time and space dimensions are considered as well as the nature of the data. Despite inherent weaknesses in much of the data, an attempt has been made to demonstrate the existence of a distinctive Archaic population that occupied the major portion of the Canadian Shield–Boreal Forest region of Canada. A further attempt has also been made to relate the Shield Archaic to adjacent and contemporaneous populations. How successful these attempts have been will be determined by future research. The hypotheses resulting from the study are most definitely regarded as starting points for investigation that will be subjected to negation or modification as determined by new and/or reinterpreted data. Certainly each hypothesis could have been subjected to more detailed discussion, but it is probably best not to belabour the equivocal evidence. If the general construct of a Shield Archaic is accepted, then this study will have achieved its central goal.

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Plate I

Figure

1
Aberdeen site, House Structure I after excavation, looking east; radiocarbon dated 1075 B.C. ±90 (S-506)

2
Eaka site, square A, looking north at hearth and tree-fall features

3
Specimens collected by Mr. Dean Starratt of Hudson, Ontario, from the Eaka site:
1 Biface blade with ground edges and bit
2 Core
3–5 Projectile points
6 Biface blade fragment
7 Projectile point
8 Copper gaff
9 Projectile point

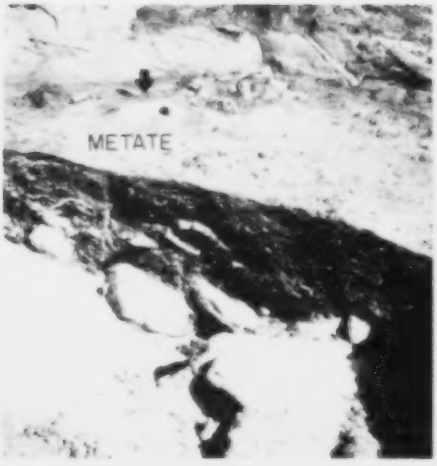
4
Elk Island site, north profile of test trench 1 in foreground; partially excavated test trench 2 in background containing hearth 1, from which a radiocarbon date of 810 B.C. ±240 (Gak-1860) was obtained

Plate I

1

2

3



4

Plate II Beach site artifacts
(1/2 natural size)

Figure

1–5
Lanceolate projectile points
6–10
Side-notched projectile points
11–13
Trianguloid projectile points
14–16
Stemmed projectile points
(arrows with fig. 16 indicate
number and direction of burin
blows)
17–20
Large end scrapers
21, 22
Large random scrapers

Plate II

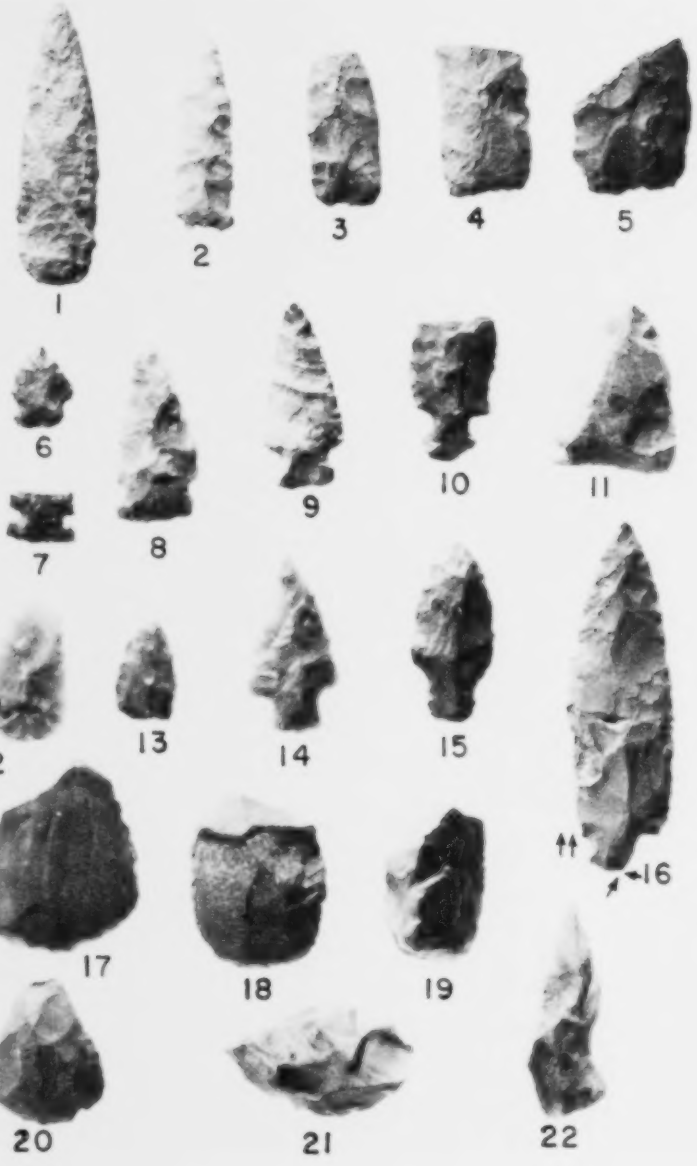


Plate III Beach site artifacts
(1/2 natural size)

Figure

1
Uniface blade scraper
2
Large triangular scraper
3, 4
Asymmetric triangular biface blades
5, 6
Biface blade base fragments
7
Irregular side-notched biface blade
8, 9
Uniface blades
10
Preform
11
Wedge
12
Flake knife

Plate III

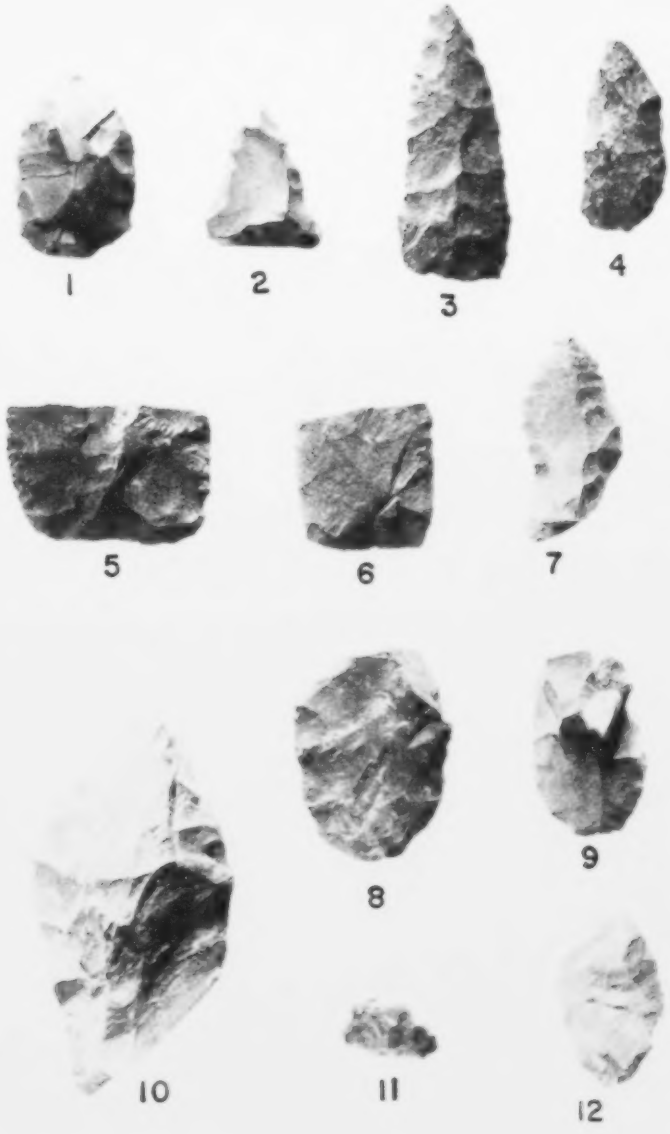


Plate IV Bancroft site artifacts
(1/2 natural size)

Figure

1, 2
Lanceolate projectile points
3, 4
Biface blades
5
Uniface blade
6–8
Large scrapers
9–11
Small scrapers
12
Core-scraper
13
Flaked-ground item

Plate IV

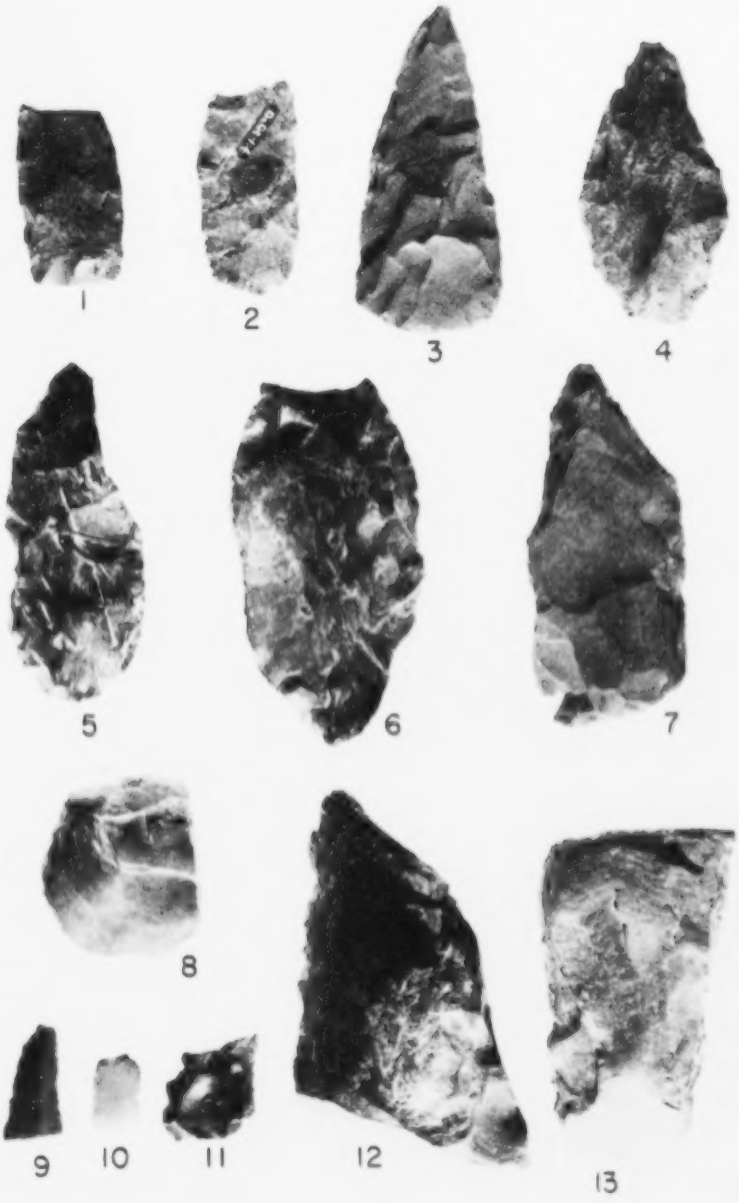


Plate V Pinder's Paradise site artifacts
(1/2 natural size)

Figure

1–3
Side-notched projectile points
4
Lanceolate projectile point
5
Side-notched flake knife
6, 7, 9
Biface blades
8
Uniface blade, ventral face
10
Large end scraper
11–16
Small end scrapers
17, 18
Small side scrapers
19
Wedge

Plate V

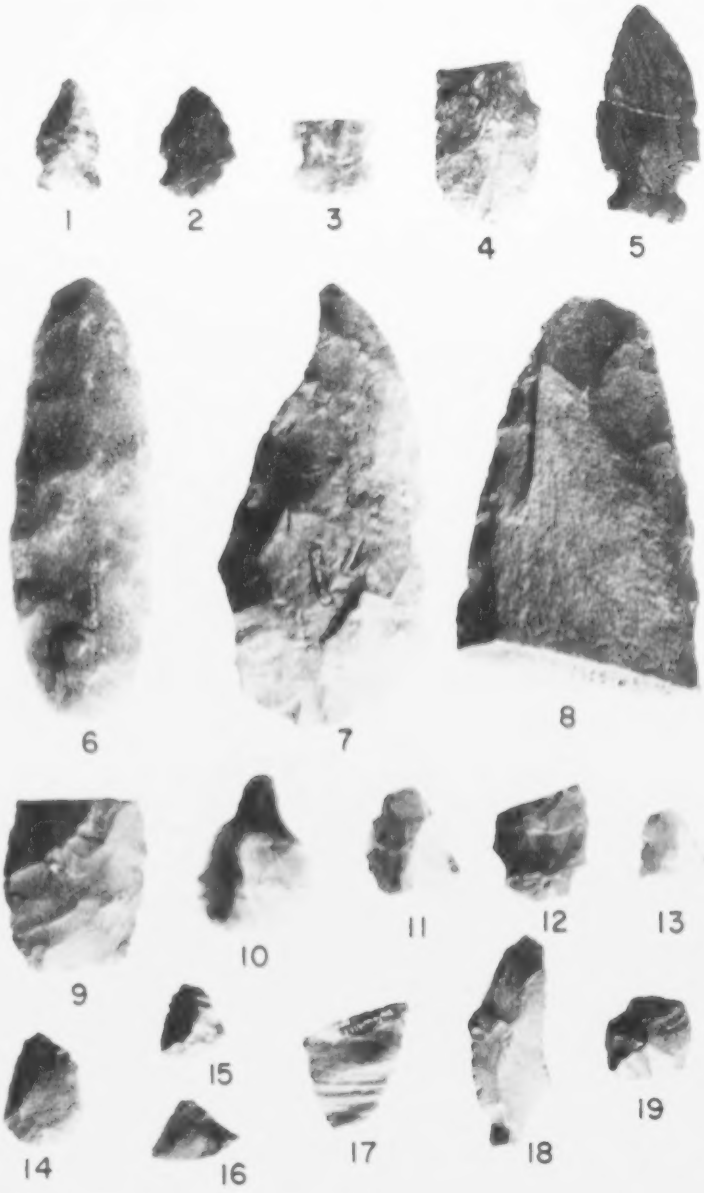


Plate VI Drunken Point site artifacts
(1/2 natural size)

Figure

1–3, 5, 9
Side-notched projectile points
4
Trianguloid projectile point
6, 8
Lanceolate projectile points
7
Stemmed projectile point
10–12
Projectile point tip fragments
13
Biface blade tip fragment
14
Drill tip fragment
15–18
Large scrapers

Plate VI

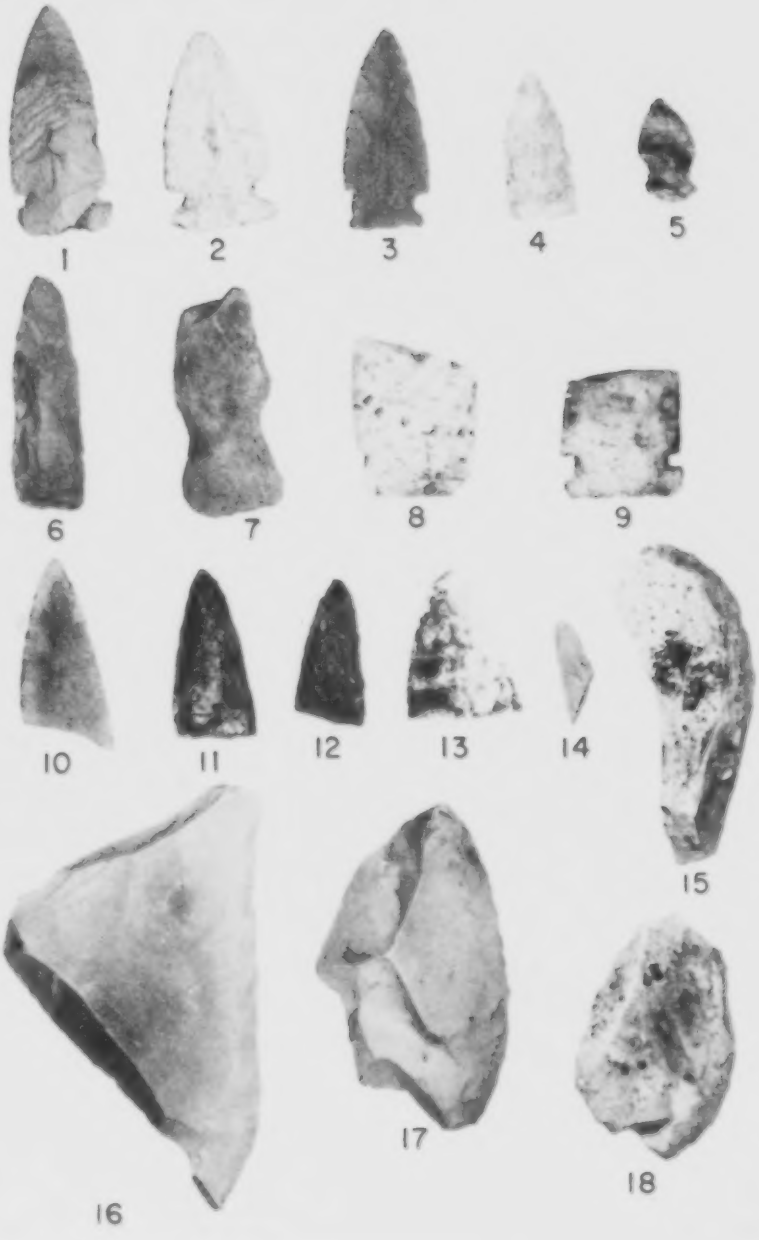


Plate VII Drunken Point site artifacts
(1/2 natural size)

Figure	
1	Biface blade
2, 3	Large scrapers
4–16	Small scrapers
17, 19, 20, 23	Large scrapers
18	Uniface blade
21, 22	Biface blades

Plate VII

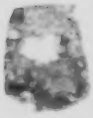
1

2

3

4

5



6

7

8

9

10

11

12

13

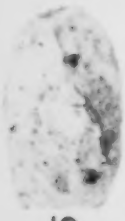
14

15

16

17

18



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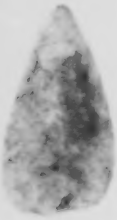

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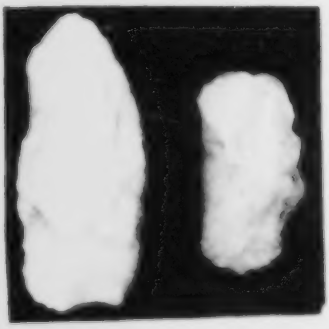


22 23

Plate VIII Drunken Point site artifacts
(1/2 natural size)

Figure

1, 3, 4, 6
Biface blades
2, 5
Large scrapers

Plate VIII

Plate IX Fretz site artifacts
(1/2 natural size)

Figure

1–10
Side-notched projectile points
11–15
Trianguloid projectile points
16–18
Lanceolate projectile points
19
Bipointed projectile point

Plate IX

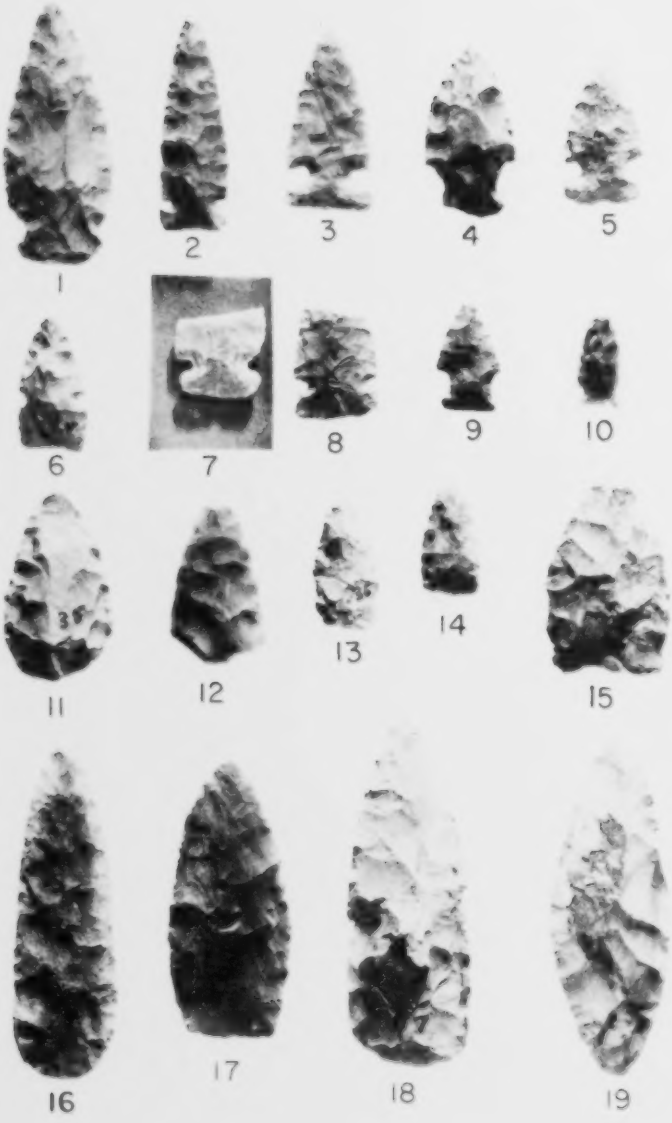


Plate X Fretz site artifacts
(1/2 natural size)

Figure

1
Bipointed projectile point
2, 3
Stemmed projectile points
4
Corner-notched projectile point
5
Single-notched projectile point
6–11
Biface blades

Plate X

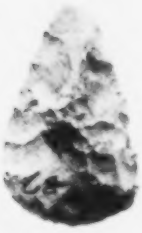
Plate XI Fretz site artifacts
(1/2 natural size)

Figure

1
Uniface blade, ventral face
2
Uniface blade, dorsal face
3–7
Large end scrapers
8–10
Large side scrapers
11
Large random scraper

Plate XI

1



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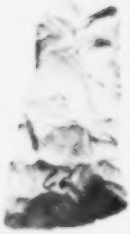

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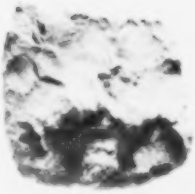

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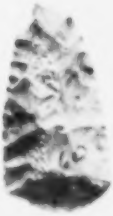

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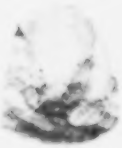

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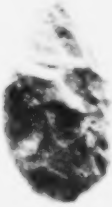

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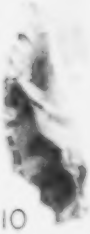

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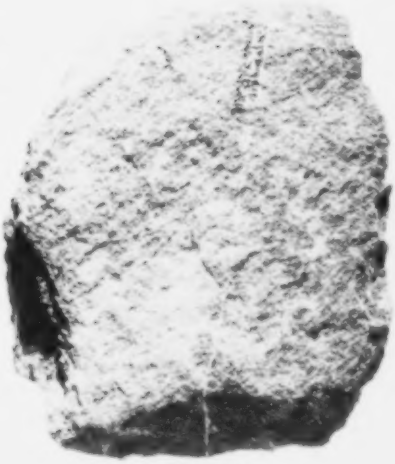


11

Plate XII Fretz site artifacts
(1/2 natural size)

Figure

1
Large spoke-shave
2–5
Small end scrapers
6, 7
Small random scrapers
8
Small side scraper
9, 10
Small hafted scrapers
11
Small end scraper
12, 13
Flake knives
14, 15
Drills
16
Linear flake
17
Bayonet
18
Chisel
19
Gouge
20
Axe
21
Ground slate knife
22
Bayonet

Plate XII

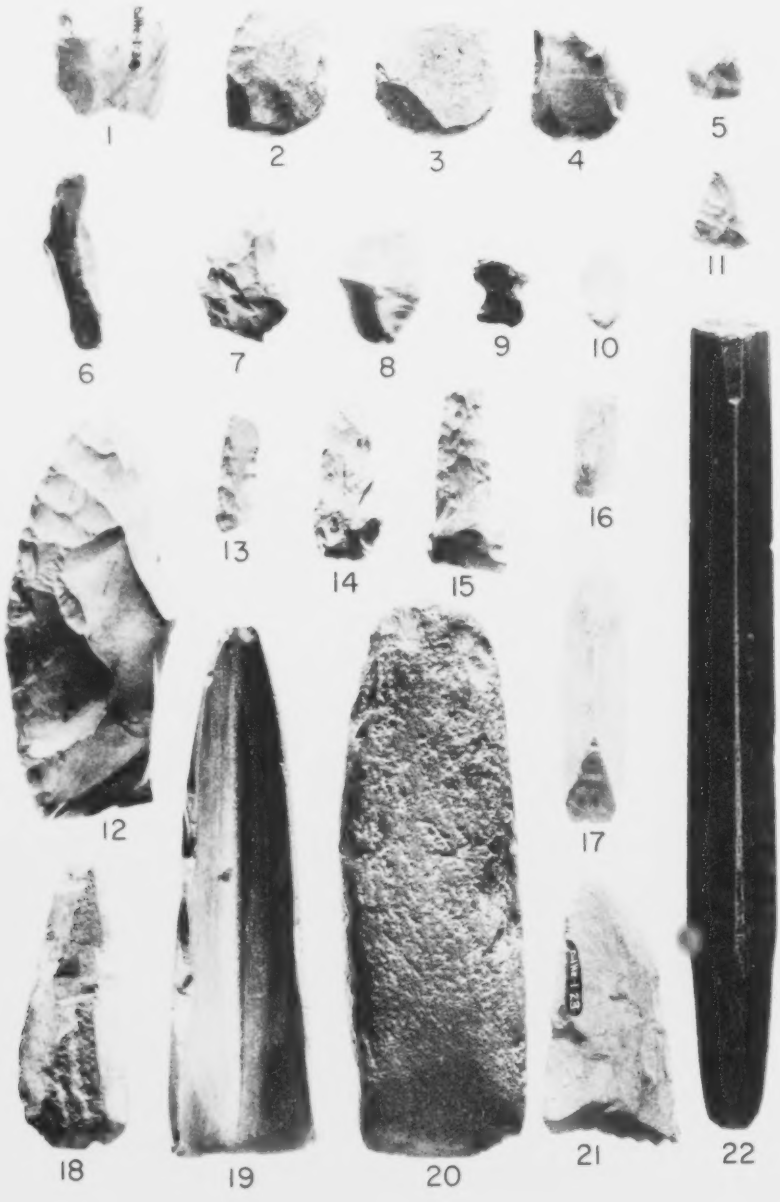


Plate XIII Eaka site artifacts
(1/2 natural size)

Figure

1, 2
Lanceolate projectile points
3, 4
Stemmed projectile points
5
Side-notched projectile point
6
Corner-notched projectile point
7–10
Biface blades
11, 12
Biface blade fragments
13, 14
Uniface blades

Plate XIII

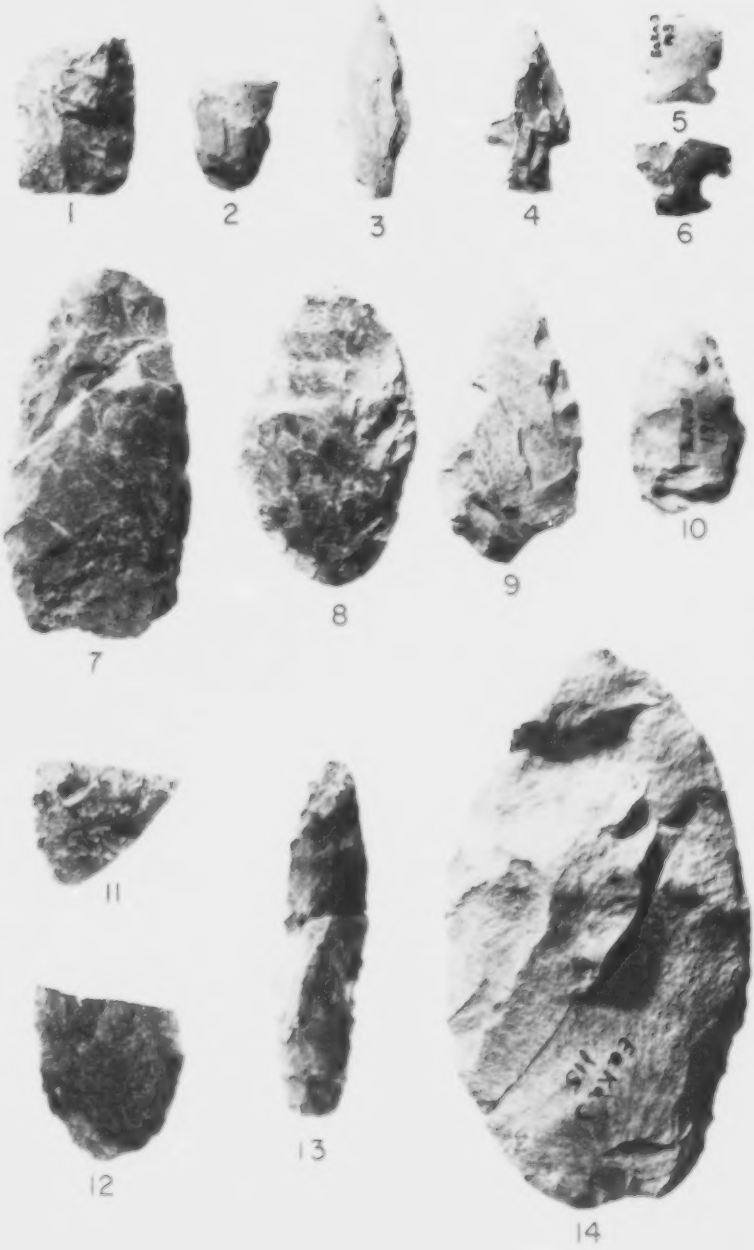


Plate XIV Eaka site artifacts
(1/2 natural size)

Figure

1–5
Large scrapers
6, 7
Small end scrapers
8
Stemmed concave side scraper
9, 10
Small side scrapers
11–14
Small random scrapers
15, 16
Wedges
17
Backed flake knife
18
Pebble knife
19
Flake knife
20
Copper fish-hook
21
Copper barb
22
Flattened copper nugget

Plate XIV

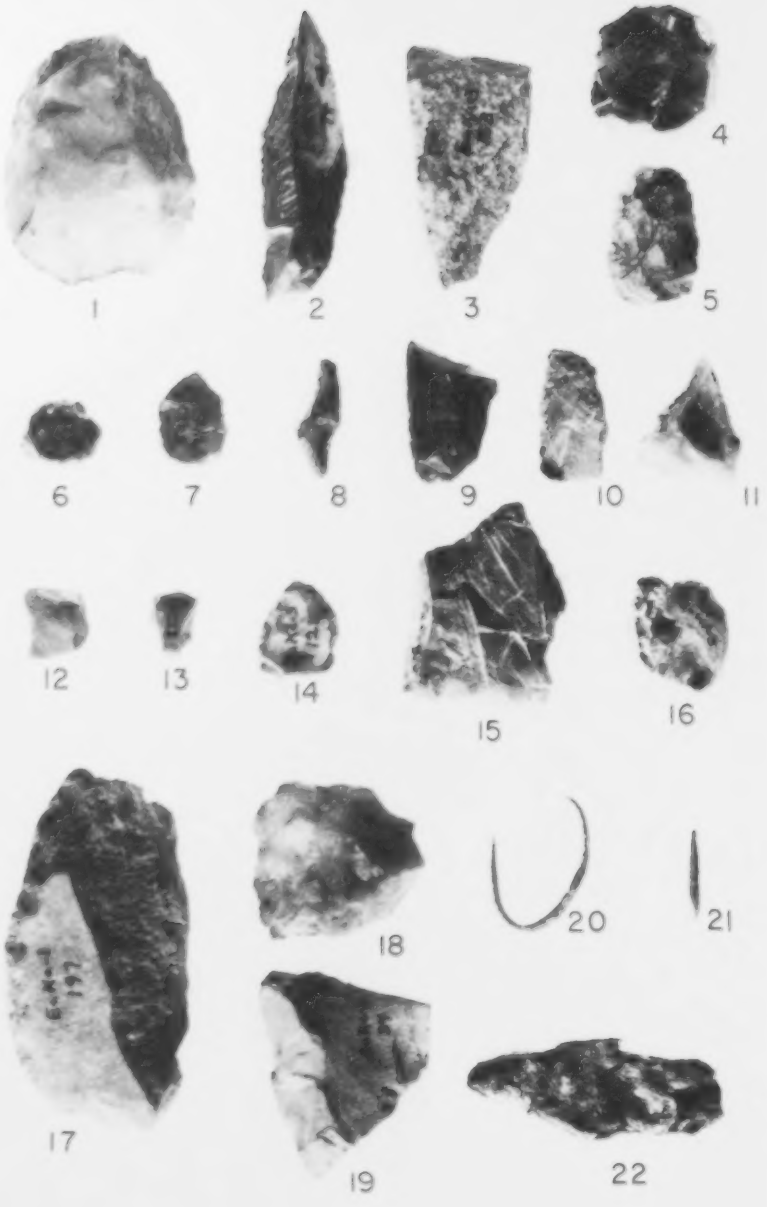
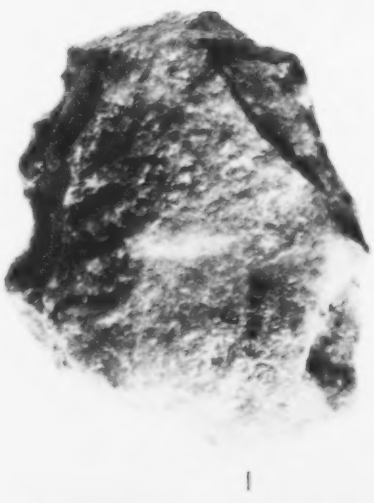


Plate XV Eaka site artifacts
(1/2 natural size)

Figure

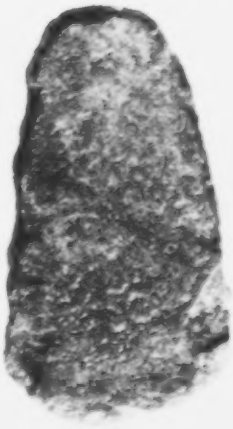
1
Core-scraper
2
Flaked adze
3, 4
Abraders
5
Mano
6
Ground item

Plate XV



1

2



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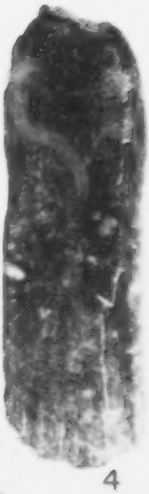

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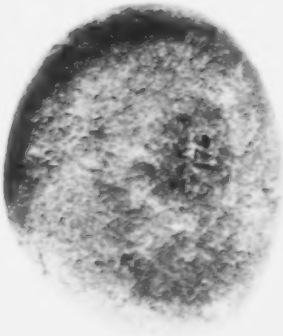

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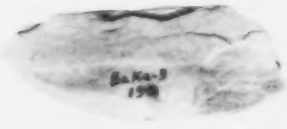


6

Plate XVI Gods Lake site artifacts
(1/2 natural size)

Figure

1
Base of a lanceolate projectile point
2–5
Small end scrapers
6
Small ovate scraper
7
Large end scraper
8–13
Large random scrapers

Plate XVI

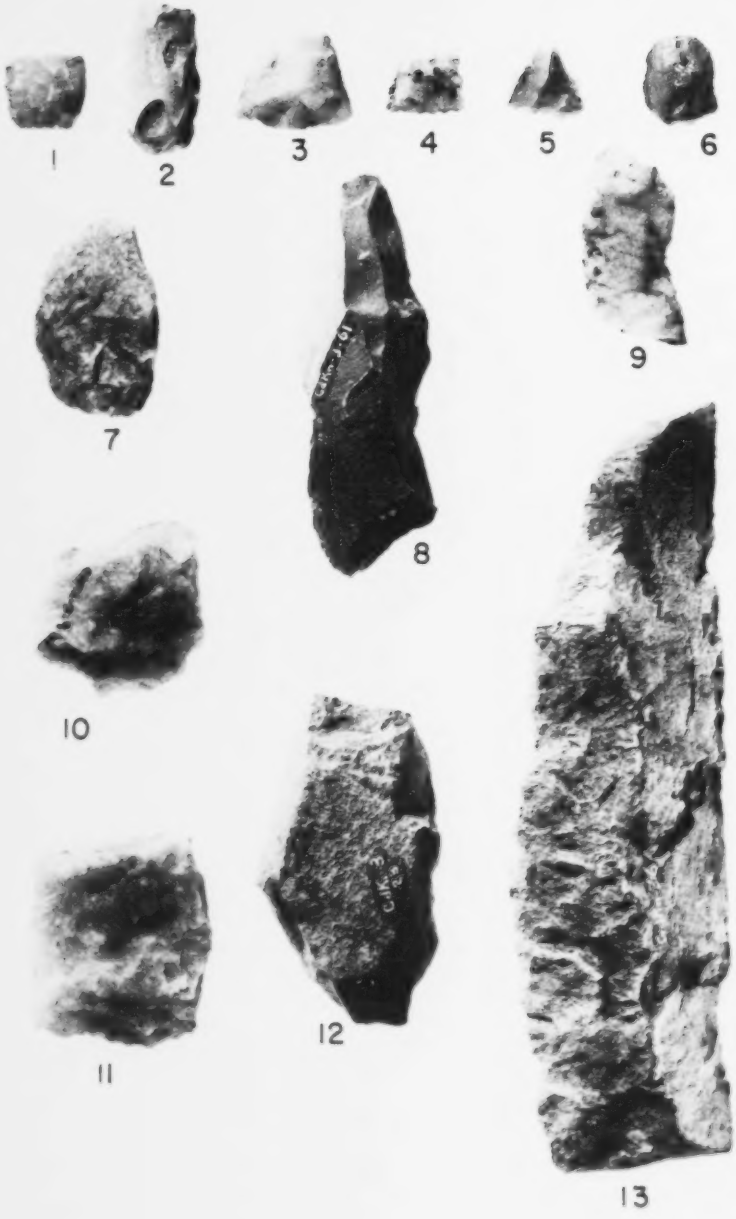


Plate XVII Gods Lake site artifacts
(1/2 natural size)

Figure

1–3
Biface blades
4
Uniface blade
5, 6
Wedges
7
Flake knife
8
Core-scraper
9
Mano

Plate XVII

Plate XVIII Elk Island site artifacts
(1/2 natural size)

Figure

1
Biface blade
2
Biface blade tip fragment
3
Large random scraper
4
Small random scraper
5, 7
Uniface blades
6
Large end scraper
8, 9
Wedges

Plate XVIII

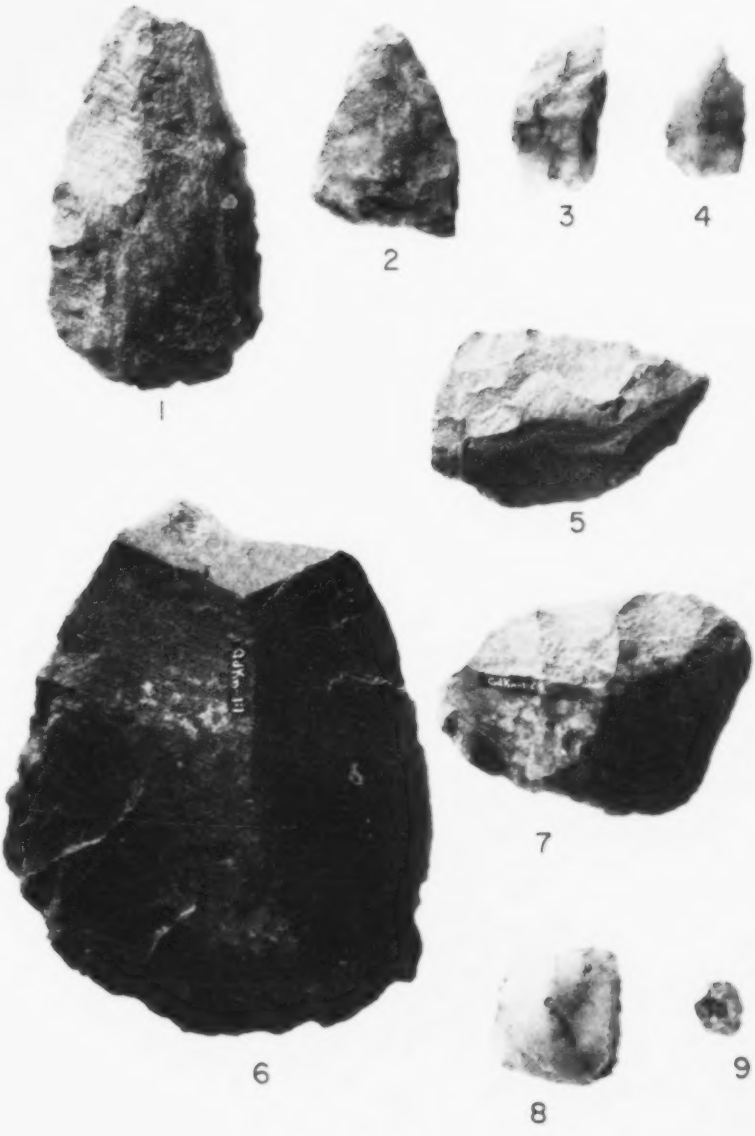


Plate XIX Blackfly Cove site artifacts
(1/2 natural size)

Figure

1
Lanceolate projectile point
2–4
Biface blades
5–7, 10
Large scrapers
8
Uniface blade fragment
9
Core-scraper

Plate XIX

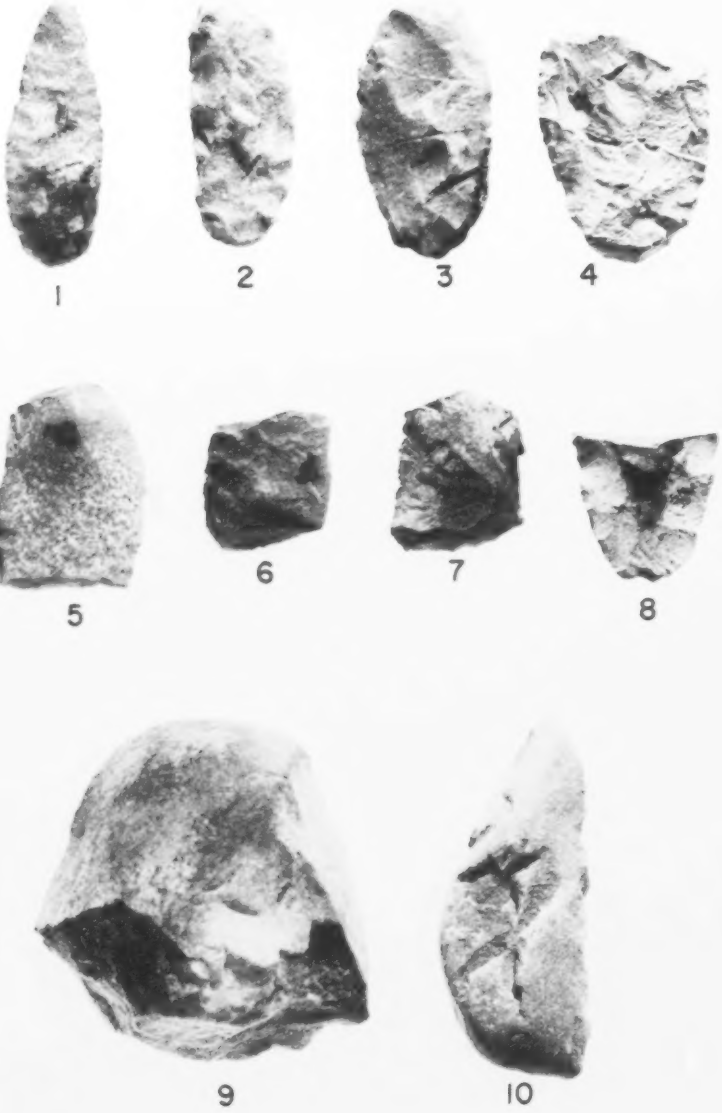


Plate XX Dot Island site artifacts
(1/2 natural size)

Figure

1
Bipointed projectile point
2
Lanceolate projectile point
3
Stemmed projectile point
4, 5
Side-notched projectile points
6, 7
Small end scrapers
8
Large end scraper
9
Large random scraper
10
Small side scraper
11
Small random scraper
12–14
Biface blades
15
Biface celt

Plate XX

Plate XXI Aberdeen site artifacts
(1/2 natural size)

Figure

1, 2
Lanceolate projectile points
3
Stemmed projectile point
4, 5
Side-notched projectile points
6
Large random scraper
7, 12
Large side scraper
8–10
Large end scrapers
11
Small end scraper
13
Biface blade point
14
Uniface blade point
15
Linear flake (striking platform at base)

Plate XXI

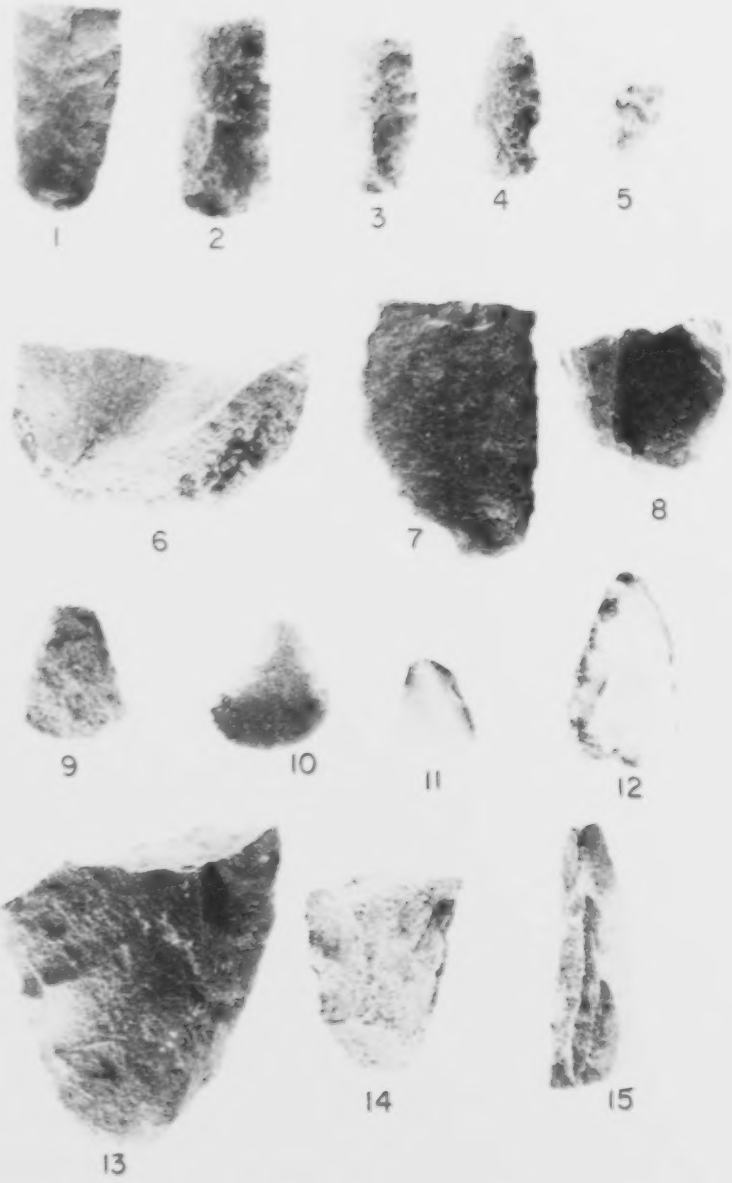


Plate XXII Dismal 1a site artifacts
(1/2 natural size)

Figure

1–3
Lanceolate projectile points
4
Stemmed projectile point
5, 6
Large side scrapers
7
Large end scraper
8
Small end scraper
9
Biface blade
10
Biface blade base fragment
11
Bifacial core flake (ventral surface)
12
Bifacial core flake (dorsal surface)
13
Uniface blade (ventral surface)
14
Flake knife

Plate XXII

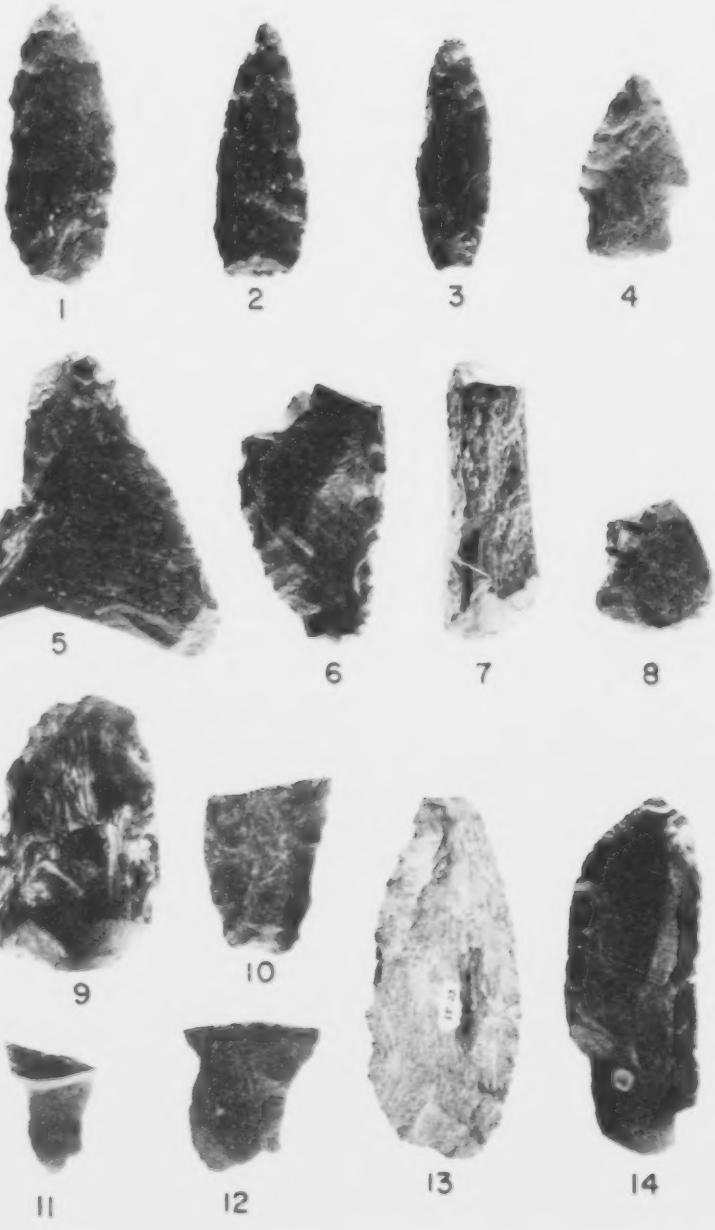


Plate XXIII Lockhart Complex (site 22) artifacts
(1/2 natural size)

Figure

1
Lanceolate projectile point base
2, 3
Side-notched projectile point bases
4, 5
Stemmed projectile points
6, 7
Large random scrapers
8
Large side scraper
9
Large end scraper
10
Stemmed scraper or minimal retouch projectile point
11
Flake knife
12–14
Biface blades

Plate XXIII

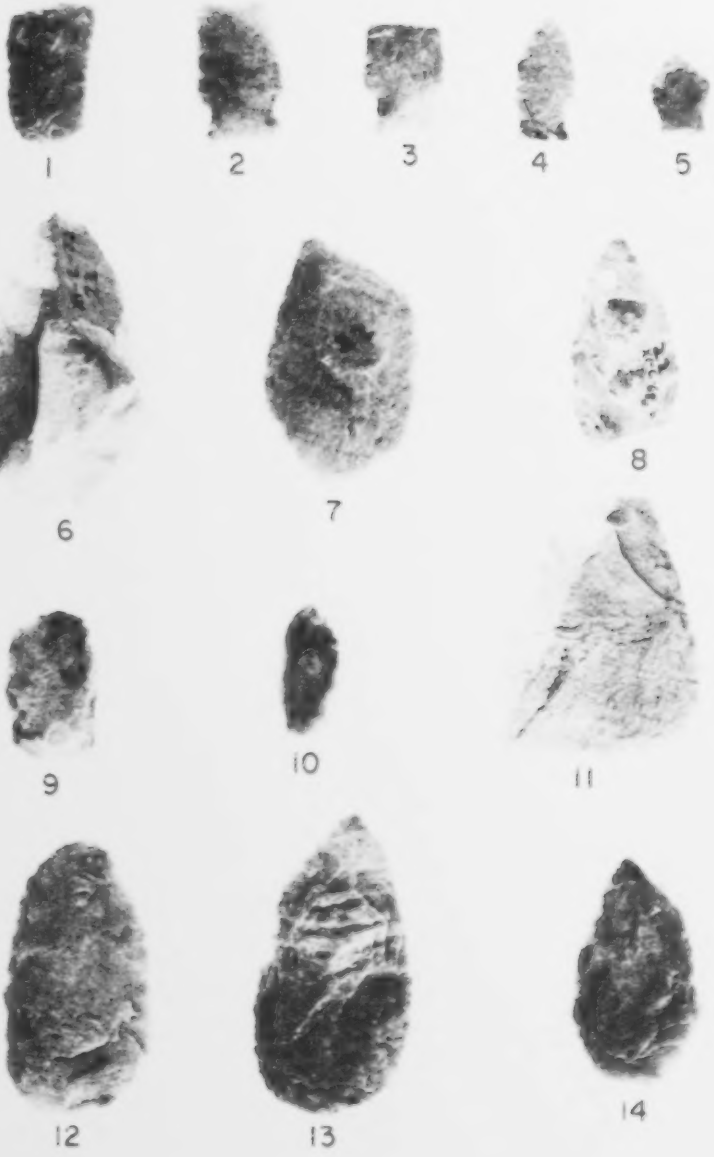


Plate XXIV Aberdeen site, House Structure I artifacts
(1/2 natural size)

Figure

1–4
Side-notched projectile points
5
Single-notched projectile point
6
Side-notched projectile point modified at the break into a scraper
7, 8
Side-notched projectile points
9, 10
Lanceolate projectile points
11, 17, 19
Large side scrapers
12, 13
Large end scrapers
14, 15
Small end scrapers
16
Small triangular scraper
18
Large triangular scraper
20, 21
Biface blades
22
Lanceolate projectile point or lance
23
Wedge
24
Flake knife

Plate XXIV

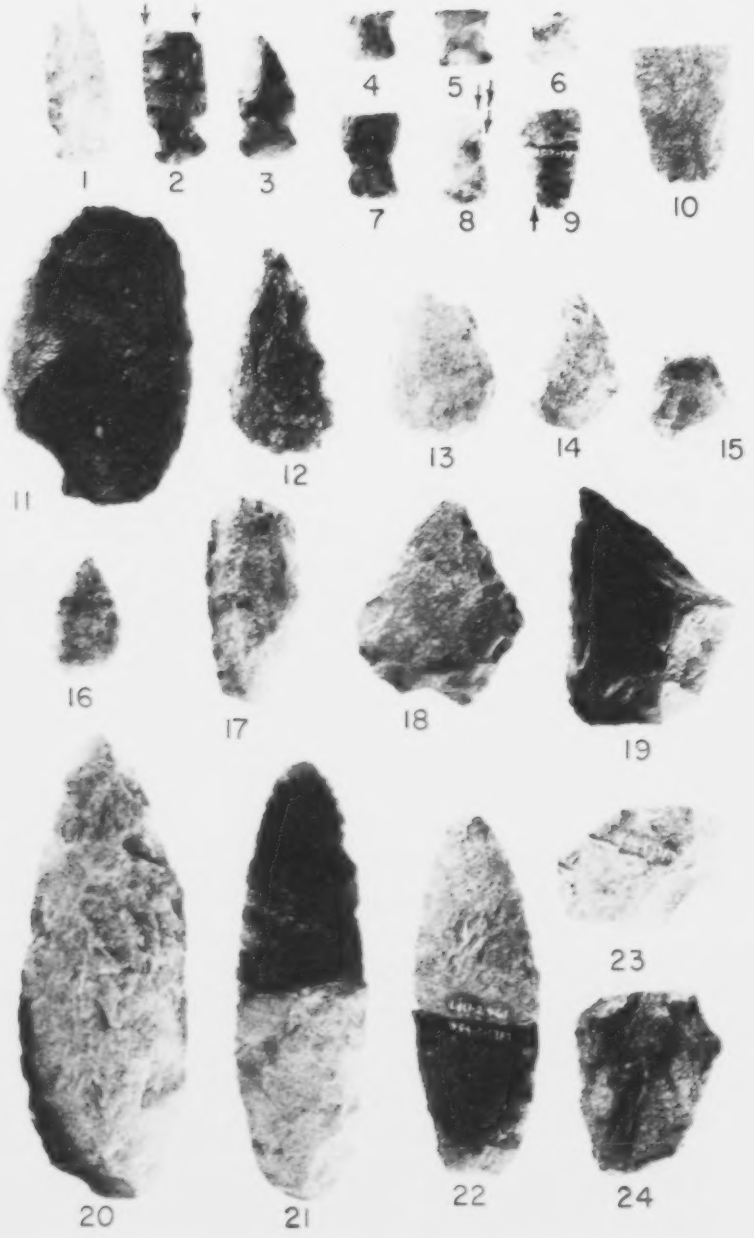


Plate XXV McCollum and Boyes sites artifacts
(1/2 natural size)

Figure

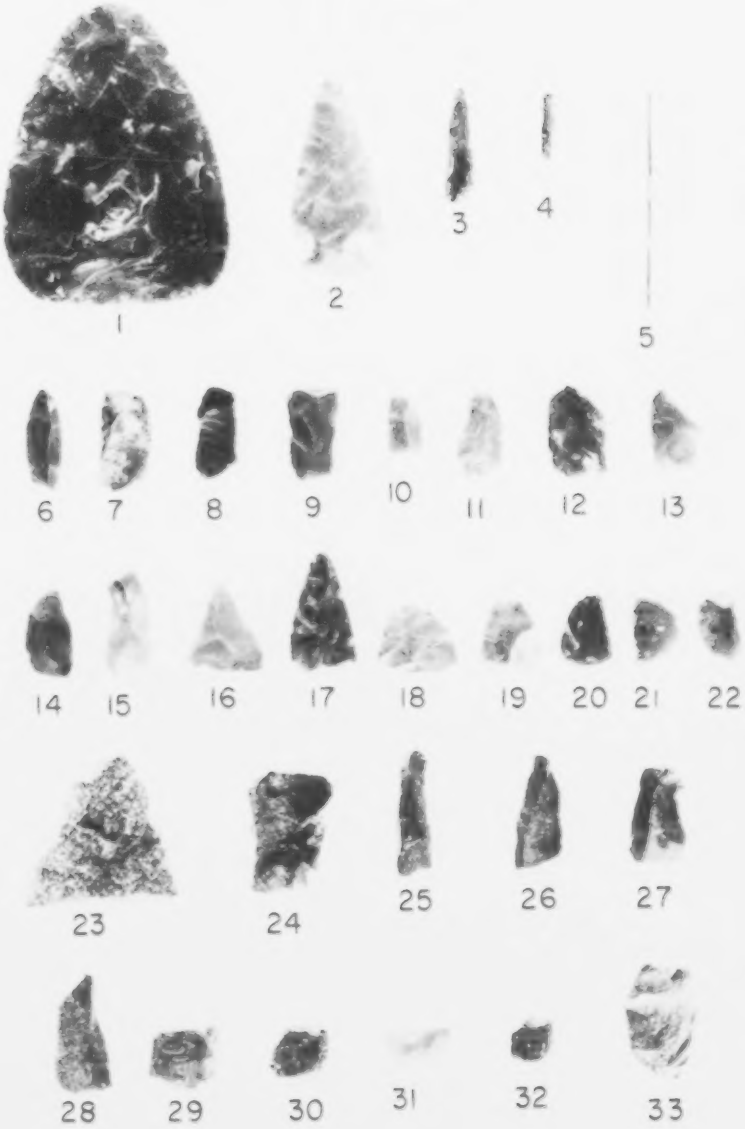
1–22 *McCollum site*

1
Biface blade
2
Corner-notched projectile point
3
Copper triangle
4
Copper rivet
5
Fragments of a copper needle
6–15
Small side scrapers
16
Small triangular scraper
17–20
Small end scrapers
21
Small random scraper
22
Bifacial core flake

23–33 *Boyes site*

23
Biface tip fragment
24
Flake knife
25–27
Linear flakes
28–32
Small end scrapers
33
Small side scraper

Plate XXV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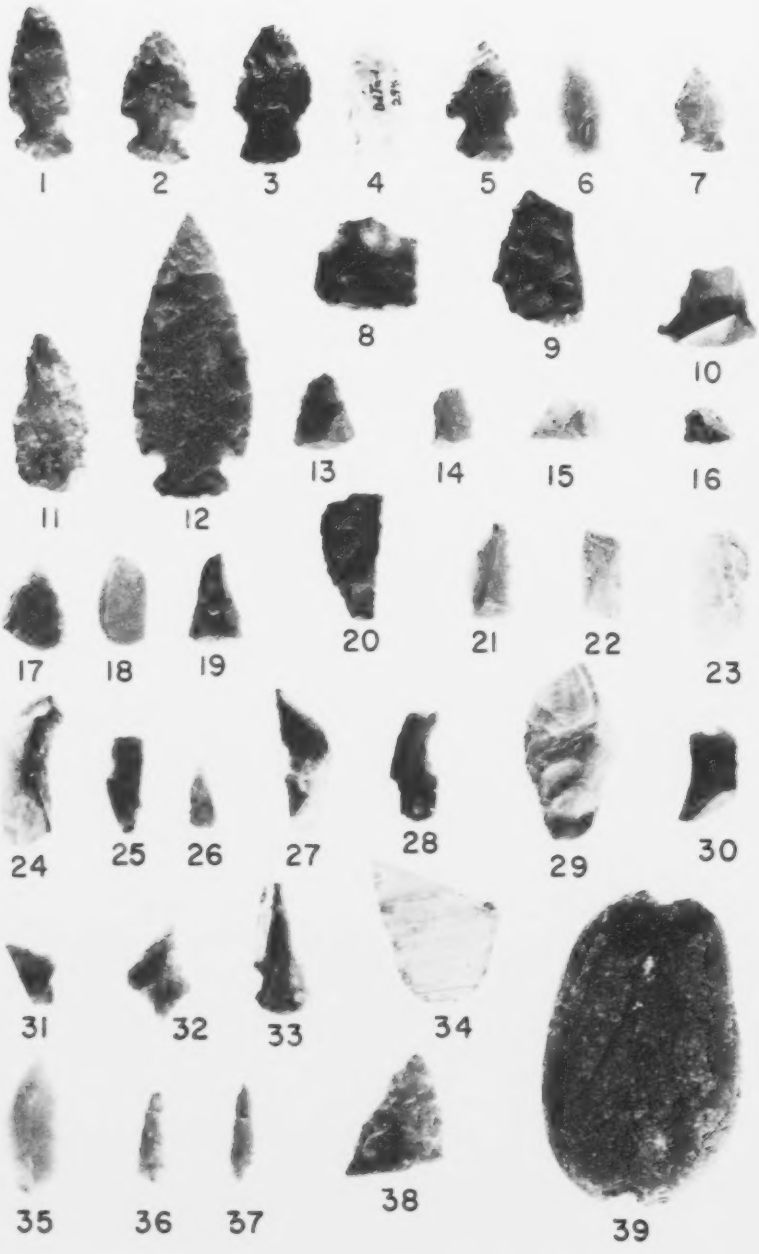
31
32
33

Plate XXVI Heron Bay site artifacts
(1/2 natural size)

Figure

1–7
Side-notched projectile points
8–10
Small end scrapers
11
Trianguloid projectile point or knife
12
Side-notched lance or knife
13–19
Small end scrapers
20–33
Wide range of small side scrapers
34
Biface blade base fragment
35–37
Linear flakes
38
Biface blade tip fragment
39
End-notched net sinker

Plate XXVI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39

Plate XXVII Dead Man's Pool site artifacts

Figure

a
Biface blade
b
Lanceolate projectile point
c
Stemmed projectile point (unfinished)
d, e
Corner-notched projectile points
f
Biface blade
g
Biface blade fragment

Plate XXVII

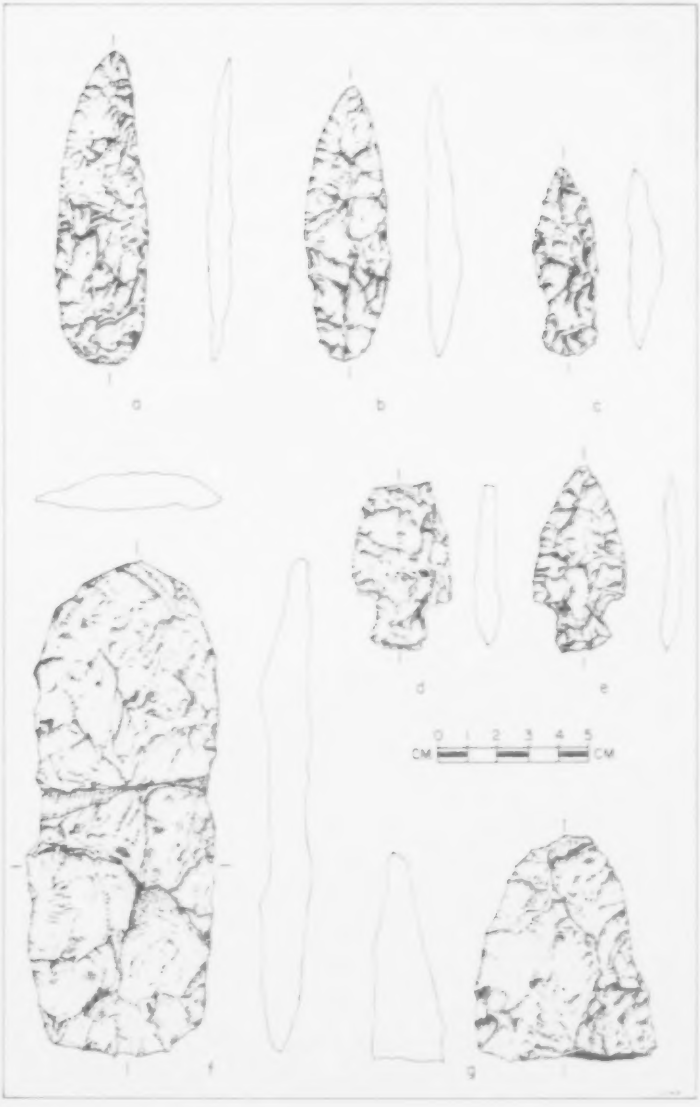

Plate XXVIII Dead Man's Pool site artifacts

Figure

a–c
Large end scrapers
d
Graver (?)
e
Uniface blade
f
Graver

Plate XXVIII

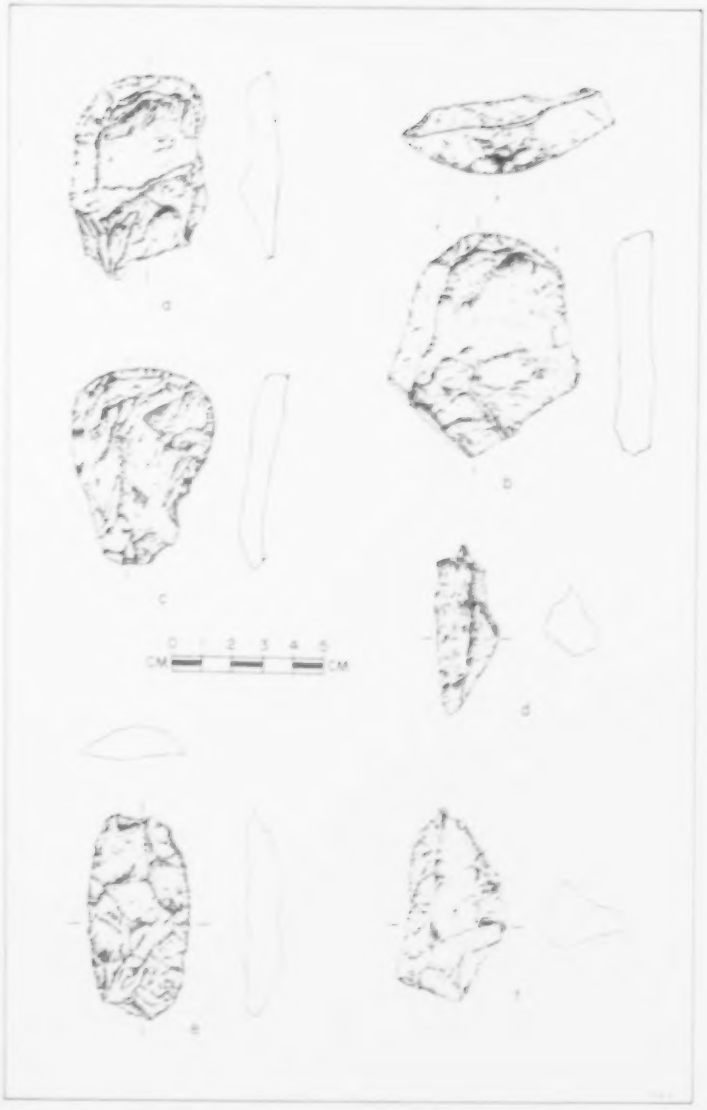

Plate XXIX McEvoy site artifacts
(1/2 natural size)

Figure

1, 2
Lanceolate projectile point bases
3
Trianguloid projectile point
4
Side-notched projectile point
5
Stemmed projectile point
6, 7
Large end scrapers
8, 9
Large random flake scrapers
10
Large end scraper
11
Uniface blade base fragment
12
Flake knife
13
Biface blade
14
Biface blade with a scraper base

Plate XXIX

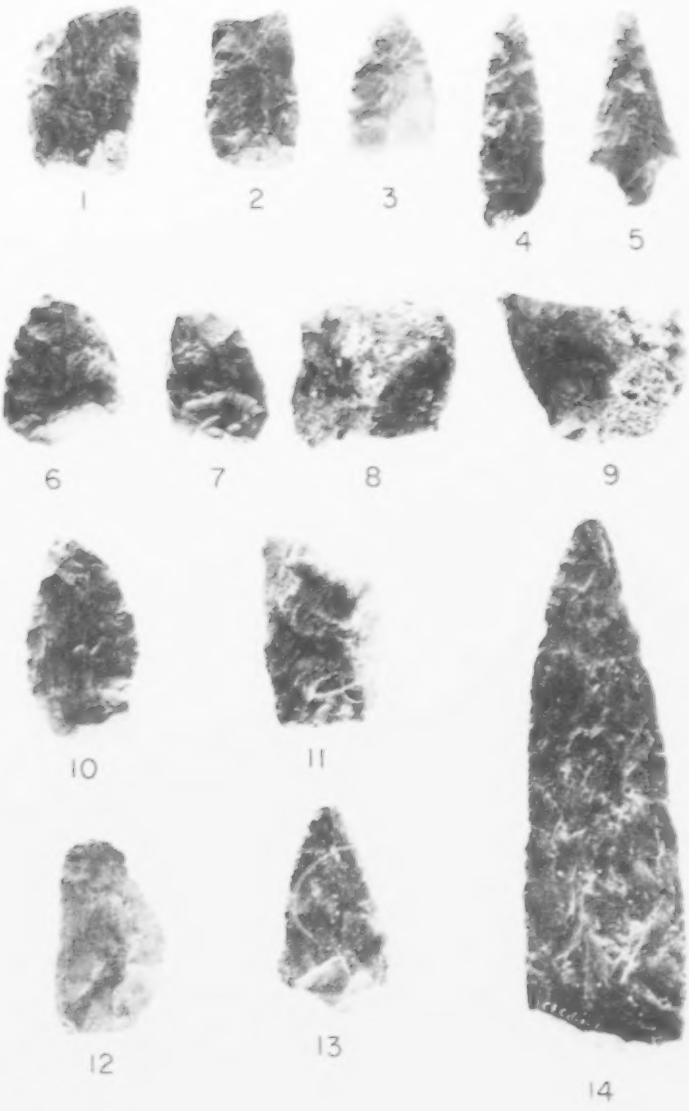

Plate XXX Grant Lake (lower) site artifacts
(1/2 natural size)

Figure

1, 2
Keewatin lanceolate projectile points
3, 4
Lanceolate projectile points
5
Side-notched projectile point
6
Keewatin lanceolate projectile point base with a minimum of four burin blows
7, 8
Large end scrapers
9
Large side scraper with one serrated edge
10
Small end scraper
11, 12
Biface base fragments
13
Spoke-shave
14
Flake knife
15
Small, alternate-face side scraper
16
Linear flake
17
Biface blade mid-section fragment
18
Wedge made on a Keewatin lanceolate projectile point base fragment
19
Wedge
20
Tci-tho

Plate XXX

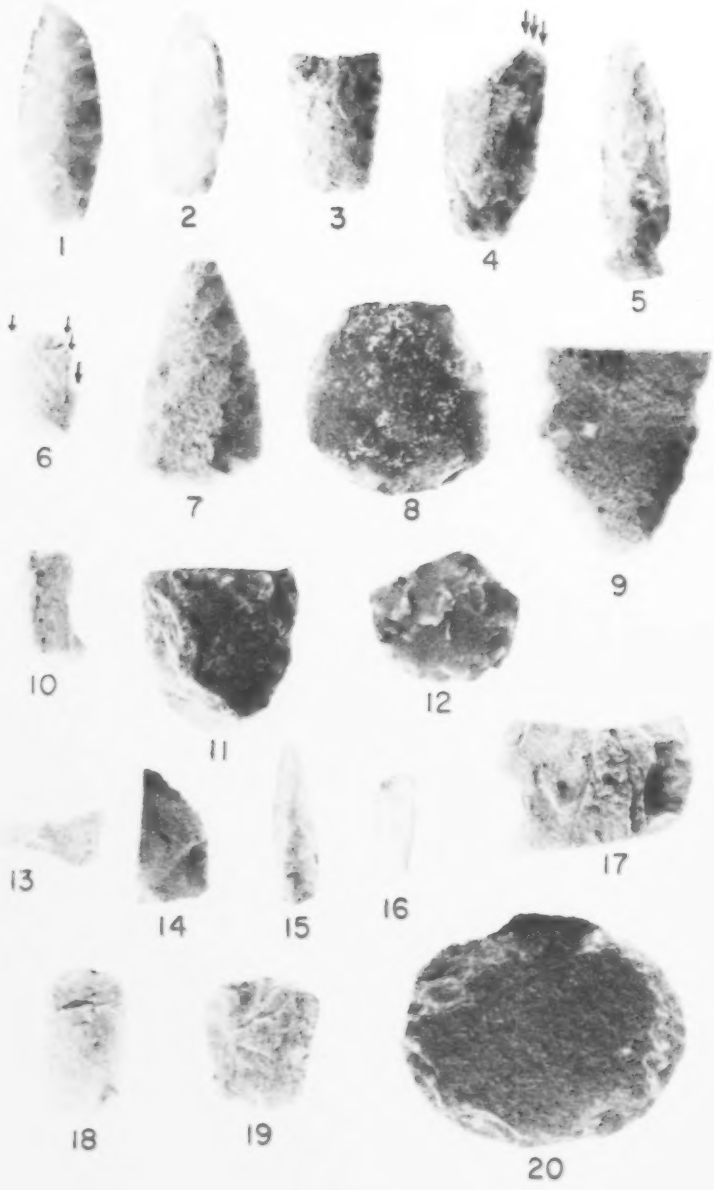

Plate XXXI LeLd-2B site artifacts
(1/2 natural size)

Figure

1–3
Keewatin lanceolate projectile points
4, 6
Biface blades
5
Uniface blade
7
Biface blade mid-section fragment
8
Preform
9
Wedge
10
Large end scraper
11
Small end scraper
12
Large side scraper

Plate XXXI

1 2 3 4 5

6 7 8

9 10 11 12

Plate XXXII Allumette Island site artifacts
(1/2 natural size)

Figure

1–4
Side-notched projectile points
5
Lanceolate projectile point
6
Side-notched projectile point
7
Open-socket copper projectile point
8
Conical copper projectile point
9
Stemmed ground slate projectile point
10
Notched sandstone abrader
11
Expanding stemmed ground slate bayonet
12
Adze
13
Gouge
14
Chisel
15
Plummet

Plate XXXII

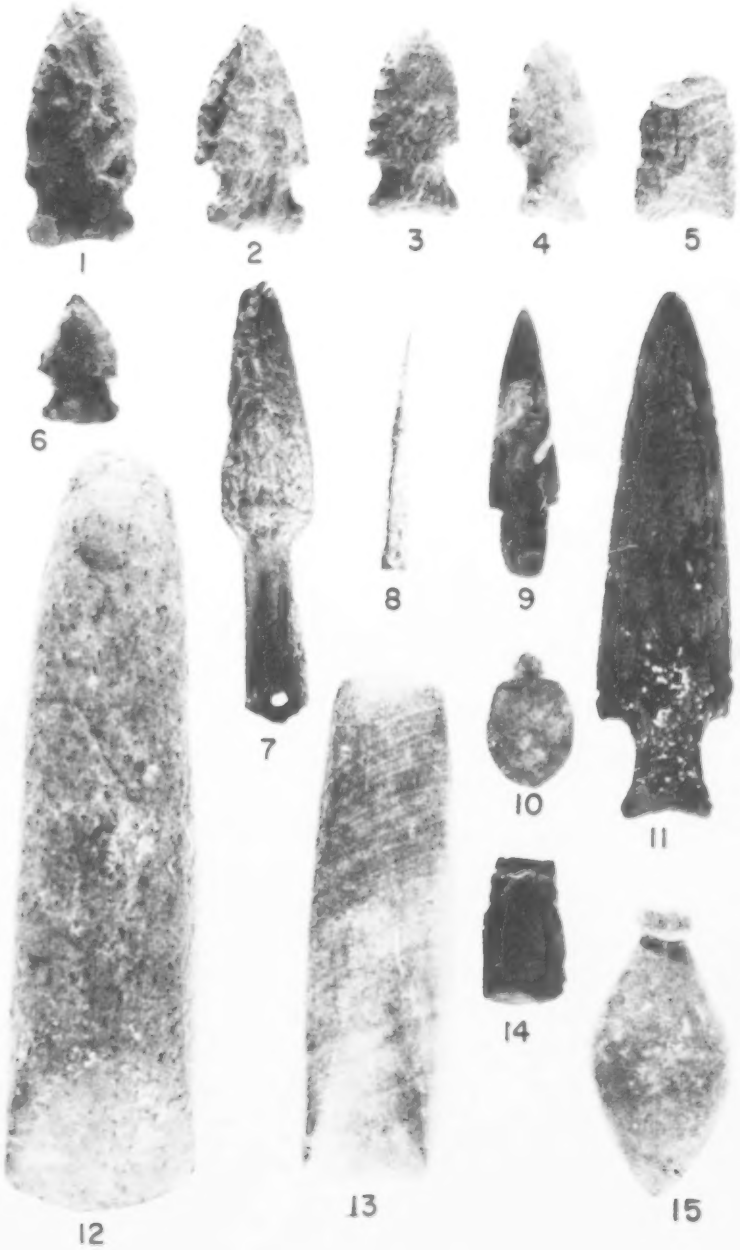

Plate XXXIII Buchanan site artifacts
(1/2 natural size)

Figure

1
Biface blade fragment
2, 3
Biface blades
4–9
Asymmetric biface blades
10, 11
Triangular arrowheads
12–15
Lanceolate projectile points
16, 17
Burins
18, 19
End scrapers
20, 21
Microblades
22
Bifacial core flake (ventral surface)

Plate XXXIII